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ADDRESS.

INTRODUCTORY TO THE ANNUAL COURSE OF INSTRUCTION.

Delivered before the Woman's Medical School, Northwestern University, Oct. 5, 1898.

BY I. N. DANFORTH, A.M., M.D.

DEAN OF THE SCHOOL AND PROFESSOR OF THE PRACTICE OF MEDICINE AND OF CLINICAL MEDICINE.

CHICAGO.

A custom which has the force of an unwritten law has ordained that a course of instruction in a medical school shall be opened by a more or less formal address to be given by some member of the Faculty or by some one who shall be designated by the Faculty. This year the choice has fallen upon me, and I therefore take my place on the program in obedience to the dictates of my colleagues. While my remarks will be specifically directed to the class, they ought to have quite as much interest for our guests who have honored us with their presence this evening, since whatever interests our profession concerns our friends of the laity to an equal degree.

It is now almost fifty years since a woman first forced her way into the medical profession, against the judgment of the great majority of the laity of both sexes, and in spite of the opposition of an overwhelming majority of medical men. One can not read the simple story of Elizabeth Blackwell, narrating her early experiences as medical student and physician without being profoundly impressed with the fact that she paid very dearly for her triumphs and her honors. Yet she *did triumph* and she *did* achieve undying honor; but more than that, she *did* open to her successors—to you, students of the present class—the doors to professional preferment so wide that they will never be closed again.

But, notwithstanding the fact that woman has been fifty years in medicine, her position is not yet quite assured; her claims to professional equality with men are not yet quite admitted; her place in the ranks of citizenship not yet quite settled; and, in fact, the woman physician is still by many people—otherwise sensible and self-poised—regarded as a kind of curiosity or freak of nature.

I therefore ask your attention for a short time, to a consideration of a few of these questions.

1. How shall the woman physician establish her claim to professional equality with men? I answer: First, by simply being a *physician*. If woman is to practice medicine at all, she must practice *all* medicine; she must be an "*all 'round*" physician; she must be the family physician, subject to calls from all members of the family—the father, the mother and the children; she must treat all diseases in all sorts of persons, at all times and seasons, without regard to age, sex or social position. In this way—and in this way only—can she establish and maintain her equality with man as a physician. The very moment the woman physician attempts to draw the line and treat only women, or only children, or only certain diseases, she abandons her claims to equality. She erects a barrier as high as the Chinese wall, which separates her from association with physicians on terms of equality. I have very many times heard the criticism from medical men that women were only "half" physicians, because they only practice in a limited way. All this must be changed if the woman physician aims at professional equality; she should be satisfied with nothing less. Just as soon as the woman physician voluntarily limits the sphere of her practice, and thus admits, in an undeniable manner, her inability to maintain her parity with men, just as soon will she begin to lag behind in the race for professional distinction. And then will begin the process of professional degeneration in women, which can only end in her ultimate professional extinction.

I answer, in the second place, that women must show their capability for original investigation in the various departments of medicine, and especially in laboratory work; must, in fact, demonstrate that they are capable of doing quite as good work as men, if they expect to reach the scientific altitude which men occupy. I have always maintained that women ought to do better research work than men, because they are endowed with capabilities for such work of the very highest order. More than that, I believe that there are women in the classes before me, who can hardly excuse themselves if they do not do original scientific work which shall redound to the honor of themselves and of their alma mater. I have more than once urged upon the ladies of our classes the necessity for a "forward movement" in this matter of patient, painstaking, toilsome, and especially thoughtful, original research work; in fact, upon one or two occasions I fear I have pressed my views with almost unwelcome emphasis. But I feel that my long service in the cause of medical education for women gives me the right to some positive convictions; and it is my positive conviction that we hardworking medical men have the right to expect more efficient help from medical women in the solution of the dark problems in pathology and bacteriology yet unsolved than we have yet had; and that this very graduating class before me ought to enrich the field of pathology by the addition of some facts now hidden in the dark portals of the future. It is by such work as I now indicate, ladies, that you shall gain admission to the profession as the peers and equals of Sternberg and Klein and Ziegler, and other princes who now occupy the field to which you should aspire. Some women have achieved such distinction; we need not go far from home to find at least one; but we should have more, and this Woman's Medical School hungers for daughters who will honor her by painstaking original research, with test-tube and microscope.

2. What position shall the woman physician occupy as a citizen, or in her relations to the body politic. To this I answer, without a particle of hesitation, that the woman physician should be a large-brained, large-hearted citizen, with a definite and positive work to do—a work which she may not delegate or neglect without incurring serious personal blame. And just here I wish to say—in parenthesis—that physicians of the sterner sex are too often recreant to their duties in this respect. When a hard and a close battle is to be fought against any current evil, the leaders are hardly ever physicians, and it is frequently hard work to get them to lift their voices or use their pens, or even go to the polls when a great moral or political question is at issue. I always have had a measure of contempt for Nélaton, who declined to serve in the French Assembly because it would damage his professional dignity; but who does not honor the great Virchow all the more because of his long and eminent services in the German House of Deputies as a statesman and lawmaker? Away with the nonsense that because a man is a physician he must therefore be a cloistered monk, unfit for political responsibilities or duties. But what relation shall the woman physician sustain to community, to society, to her neighbors? She can not vote—not yet. The time may come; *will* come, I believe, when women can vote on all political and economic questions. Personally, I do not care a farthing whether women vote or not. I certainly have no objection to their voting, and if the responsibility of deciding the question were left to me, I should confer the ballot upon women and, then, with profound interest, I should watch the result. But a woman physician should not sit and do nothing because she can not vote. There is plenty of work for her to do—plenty of opportunities for practical usefulness.

She can be a practical teacher of sanitary science in the community where she lives, and this is a sadly-needed work. Every physician ought to be an educator—a teacher—from whom should radiate knowledge which the laity need, which they will gladly receive and which they can not get elsewhere. But the woman physician has special facilities for teaching mothers and nurses the essentials of sanitary science as applied to the home, and therefore she has a special responsibility in that direction. How frequently it happens in practical life, that a few words spoken to a mother may save her child from sickness—perhaps death. How easily the woman physician, with her woman's tact and sympathy, can reach the ear of a nurse or mother, when a male physician who tried to do the same thing would only incur the charge of impertinence or meddlesomeness. And so in other matters, the woman physician can, if she will, exercise an educating, elevating, indeed an almost evangelizing influence in the homes of her *clientèle*. In matters of dress, diet, ventilation, exercise—in all things which relate to healthy homes, healthy mothers and healthy children—the woman skilled in medical science can exert an influence for good for which she must be held responsible in the final reckoning. And as her opportunities are greater than those of the male physician, so is her responsibility greater. A woman can enter where we can not; a woman can utter what we can not; a woman can do what we can not; therefore, she can exercise an influence and accomplish much that we can not.

Remember this, young ladies when you begin your lifework; and remember also that when you are teaching the people the essentials of practical sanitary science, you are likewise preventing disease, which is an infinitely higher function than curing disease. We are no idle dreamers when we say that, when all the people become practical sanitarians disease will be robbed of half its terrors; and we must add in the same breath that the principles of sanitation must be taught to the people nine times out of ten by their medical advisers. And you—lady students whom I now address—must have a hand in this most beneficent work.

Again: Many of you will be so situated that you can take a practical and active interest in the common schools of your neighborhood. The chief glory of our Republic is the common school. Indeed, so long as the common school—the "district" school, the "little red schoolhouse"—is open to the children of our majestic country, liberty is safe, the people can never be enslaved, and government "by the people, for the people, and of the people" can never cease. But the citizen has duties toward the common school, and the woman physician is a citizen, and that means you. What can you do for the common schools? First, you can take a loving and living interest in it, and thus, by the force of your example, you can arouse interest in others. You can visit the common school, seek the acquaintance of the teacher, if the teacher is a woman, and help her in her work. Some of you have been teachers; you can help some youthful and inexperienced teacher over the rough places that beset her way and thus lend a helping hand to one who is in real perplexity. If you are a good politician, you can get elected as a member of the school board and thus enable yourself to speak and act with authority. The first and only political office for which I was ever a candidate, was Superintendent of Schools in a little New England village. As party lines were strictly drawn, and my party was in the minority, I was promptly defeated, and grievously disappointed, because, among other reasons, I was in rather acute need of the salary, which was $25 a year. I hope that you will have better success. I hope you will become winning candidates for positions on school boards, with salaries as munificent as the one I missed, and opportunities for usefulness infinitely greater than the one to which I aspired in vain. There is no higher or more imperative duty devolving upon the citizen than the care of the common school, and there is no edifice so important as the schoolhouse, no spot of ground more sacred or more hallowed than the dry and verdureless patch, on which the children of the common school expend their pent-up vitality. You should make this priceless institution your care. You can lecture on hygiene; you can instruct the children, and through them their parents, concerning the laws of health; you can exercise a mighty influence in the improvement of the school buildings, in improving methods of teaching; and in many ways which I can not suggest, but which you can see, as the occasion arises, you can exercise the influence with which you are endowed by reason of your position and education for the improvement and elevation of the common school.

In that beautiful old story, "Locke Amsden or the School Master"—which I read so many times in my boyhood—there occurs an incident which illustrates the precept that I am trying to impress upon you. The "district school" in the little Vermont town, commenced its winter's work under an enthusi-

stic sophomore, and in a bran' new schoolhouse. The frigid weather came, the old "box stove" in the center of the schoolroom buzzed cheerfully as it got hotter and hotter day after day, the new windows fitted so tightly that they could not be opened, and the air became foul from accumulation of "carbonic dioxid"; but the sophomore communicated his own enthusiasm to the scholars, and for a time all things went swimmingly, and everybody was delighted. But by and by a strange langour began to creep over the school; the children sickened and dragged themselves about, listless and forlorn; one of them broke forth in his sleep and repeated the whole multiplication table without dropping a stitch, while another rose from his bed, solved a problem in arithmetic which he could not solve when awake, and went back to bed utterly unconscious of his exploit until he awakened next morning. Meantime the schoolmaster had several times broken forth in school hours, and recited Latin quotations which were all "Greek" to the scholars—and probably to the teacher—and passages from Shakespeare, with wild and frantic gestures, and various facial contortions, in truly sophomoric style; indeed, on one occasion, when an uncommon apathy had stolen over the scholars, he wildly shouted that his name was "Norval," and that his father fed his flocks "on yon Grampian hills," when every scholar knew his name was Jeremiah Jenkins, and that the "hills" were only the Green mountains; and hence it began to be darkly whispered that the schoolmaster had formed a league with the evil one, and was practising the "black art" and "bewitching" the children. So on a cold dreary winter's night, a school meeting was called in the schoolhouse for the purpose of "investigating" the schoolmaster, and ridding the excited community of his baleful presence; but while the people were solemnly discussing the awful situation in the close and heated room, the village doctor came in, sniffed the tainted air, and calmly informed the anxious group of citizens that ventilation was the cure needed for the form of witchcraft which they were fighting, and after the carpenter had lowered the upper window sash, and thus allowed the evil air to escape, the people sheepishly went home in a happier frame of mind—and the bright young sophomore became, of course, an apostle of sanitary science. It is useless to add that he married the beautiful daughter of the richest man in town, that he went to Congress, and after a glorious and useful career, was gathered to his fathers. Whether the story is true, or not, its lessons are true so far as they relate to the schoolhouse and its occupants, and the timely service of the village doctor, who did not confine his practice merely to administering Dover's powder and boneset tea to the sick, but who stepped out into a larger sphere, and became the guardian of the health and lives of the children of the common school. Similar opportunities will come to you; not that you will encounter such superstitions as lead to belief in witchcraft and the "black art," but you will find plenty of schoolrooms, churches, halls, and even houses, where you can confer a real blessing by pointing out the necessity for fresh air and ventilation. May I hope that you will improve the opportunities as they arise, and thus prove yourselves good citizens, as well as good physicians.

I have pointed out a few of the duties which will legitimately devolve upon you, both in your relation to the profession and to society or the body politic. Other duties or other opportunities for usefulness will arise as you accumulate experience and acquire influence. I fully believe that you will make the most of your opportunities, and as a necessary corollary, that you will make the most of your lives.

Let me in conclusion glance for a moment at the past, and then for a moment at the future. In an earlier part of this address I have said that about fifty years have elapsed since a woman made her entrance into the medical profession in this country. At first glance one is inclined to think these fifty years have been rather barren of results; that too few women have reached professional eminence and made themselves felt in the medical world. It is indeed true that the number of women who have distinguished themselves, either in practical or theoretic medicine; either in the hospital ward, the lecture-room or the laboratory, is small in comparison with the number who have graduated. Nay, I will go a step further, and say that the ratio of distinguished medical women is smaller than the ratio of distinguished medical men, in comparison with the number of graduates. Let us inquire briefly into the reason for this. I do not think we will have far to seek.

In the first place, twenty-five of these fifty years were spent in battering down the walls of opposition and prejudice on the part of both physicians and laity, which barred the way of the woman aspirant for medical honors. Twenty-five years ago the woman who announced herself as a medical student had to encounter opposition, ridicule and not infrequently absolute insult, as she made her weary way toward a medical degree, which brought her few privileges and less honors. She was not welcomed in the lecture-room, in the clinical amphitheater or the hospital ward. It was not uncommon for the clinical professors to indulge in remarks which would bring the blush of shame to the cheeks of the lady students, and arouse indignation on the part of male students who were gentlemen as well, It would be impossible for a woman to do her best work under such dispiriting circumstances, and it is no wonder that but few reached the goal of their ambition. But again, at the time of which I am speaking, after the female student graduated, she generally met with a very frigid welcome on the part of the profession, and hence she was alone in her glory. She lacked that inspiration which a community of effort engenders; it is impossible for one to permanently keep the fires of enthusiasm alive in complete isolation. Interchange of thought, interchange of counsel, comparison of efforts and comparison of results are necessary for the professional mind of woman as well as man; but these all-important aids were frequently denied to the woman physician.

Pardon me, ladies, if I mention one other fact which militates against the greatest success of women. It is the fact that a majority of young medical women do not settle down to months and even years of hard, and often unrequited, labor, as the indispensable prerequisite of success. There is no other road to success. You must work incessantly—pay or no pay. You must work in your libraries, in dispensary service, among the poor, anywhere, everywhere, night or day, so that you acquire experience, dexterity and knowledge. Young medical women often shrink from the trying ordeal that awaits every young physician who seeks success in a large city, where competition is hot, and every desirable position is fought for

by a hundred applicants. And especially is this true, if our young graduate happens to be in a condition of financial anemia, as is too often the case. Alonzo Clark—the greatest physician New York has ever produced—a man who stood as the acknowledged head of the profession in the field of pathology and practice, whose consultation practice became so enormous that at last he had to refuse as many calls as he answered, spent his early years in dire poverty, haunting the hospitals, clinics and morgues of New York like a spectre—frequently lacking the means to buy a dinner—but always at work—at work—at work. "Go thou and do likewise;" go hungry if you must; dress plainly if you must; endure neglect from society if you must; but study, observe, experiment, think, write—work hard and constantly, and success is sure to come. I know; I have been through the same hard school myself, and so have some of my colleagues now here present.

The position of woman in medicine is assured. She has come to stay. The past fifty years have been years of pioneer work; all honor to the noble women who have cleared away the obstacles and opened up a great highway for you. Their work was necessary; see to it that you appreciate it at its just value, and render unto them the honor that is their due.

Meantime a new woman is being slowly evolved. For twenty-one years I have watched the evolution of the medical woman myself. Fifty years more, or three generations from Elizabeth Blackwell, will be required to complete the work. The medical woman,—the woman with the scientific cast of mind,—the hard-working, patient, self-denying, plodding student is almost here. Her representative, her *avant courier*, is here—is in this very class, in the plural number—an earnest, a promise, a prophecy of the host yet to follow. I shall not see the fruition of the promise; but, as I look back on my career as a medical teacher, now drawing to its close, I glory chiefly in the fact that I have had something to do in the work of opening the doors of medical advancement to American women.

ORIGINAL ARTICLES.

CHILDREN'S DISEASES.

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BY CHAS. H. SHEPARD, M.D.

BROOKLYN, N. Y.

Our purpose in this paper is to enforce the efficacy of heat in the treatment of the ills of infancy and childhood, as well as to illustrate the pleasing and peculiar adaptability of the Turkish bath, which is the most perfect form of using heat in all cases of disease. What we have to say is based on experience in raising a large family, as well as some considerable practice with patients during a period of thirty-five years.

While a vast amount of disease and suffering that occur in early life is produced by errors in diet, clothing and exercise, a large portion of it comes from want of cleanliness, added to by impure air, unwholesome dwellings, etc. Lack of knowledge is responsible for many pernicious practices that lead to debility, and too frequently an untimely end. Impure air, of whatever nature, has the most deleterious influence upon infantile life, producing a startling mortality in all our large cities, and a want of cleanliness is equally well known to be many times more injurious. Never was the old adage: "Heat is Life and Cold is Death," more true than in the treatment of children's diseases. The simplest and most desirable form of heat is that derived from the one indispensable source of all heat—sunshine. We well know that all vigor comes from the sun, both to the animal and vegetable world, that it vitalizes the nervous system, develops the red discs of the blood, and also that it is the most powerful foe to contagion. The International College of Physicians which lately met in Italy declared sunlight to be the most practical of all antiseptics. A sun bath is the only remedy needed in some cases. Like the action of the sun's rays—gentle, yet all-powerful in quickening life—so does heat, in its proper administration, renew and vivify every function of the body, while at the same time it is so simple and available that none need suffer for the want of it.

Whenever cleanliness with infants is neglected, disgusting, painful and obstinate cutaneous eruptions are likely to occur, or the foundation may be laid for derangement of function, or serious disease of some internal organ. At no period of life is injury more liable to be produced, for at such time the vital resistance is at a low ebb, therefore repeated ablutions of the surface are most important. Again, the skin and the mucous membrane of the digestive canal and of the respiratory organs in an infant, are the principal surfaces upon which morbid impressions are received, consequently they are those in which disease usually first shows itself and the exhalent function of the skin is extremely active, while calorification is feeble. We are also to recollect that very frequently the cerebral symptoms which occur during infancy and childhood are altogether independent of disease of the brain or spinal marrow, being due solely to functional disturbance of the nervous centers, the result of reflex irritation. At this period, when the functions of life are confined to nutrition and development, it is important that we obtain the most favorable conditions for children, not alone to promote their normal growth and activity, but also to prevent any predisposition to particular forms of morbid action, as well as to give strength to overcome whatever prevailing disorder to which they may at times be exposed, whether it may be sympathetic irritation or the ordinary crises through which they usually pass.

In the treatment of children, much more than with the adult, is the cheerful and what may be called the hypnotic influence to be exhibited. Many times the dread of a disease is worse than the disease itself. A cheerful and relying faith in the efficacy of the treatment to be administered is of the greatest value. When the ablest physicians confess to a feeling of helplessness, it is time to give Nature an opportunity to recover herself, and instead of initiating measures that make a draft upon the vital powers, the part of wisdom is to remove, in the gentlest manner possible, all obstructions to the harmonious working of the functions, and encourage every effort the system is making to throw off morbid conditions.

Most of us believe that the death of young children is not a necessary or inevitable result of any disease from which they are suffering, but rather that it is an accident that may often be foreseen by any one who will cultivate the habit of minute observation. Many

an infant life has been saved or sacrificed by the observance or the neglect of things which are too apt to be lost sight of as utterly beneath the dignity of science. When we stop to consider how much benefit is to be derived from the simple use of heat, whether it be the internal use of hot water or the external use of hot compresses, or the primitive forms of a hot bath, it may reasonably be supposed that the scientific application of heat in the form of hot air, familiarly known as the Turkish bath, would be productive of a more uniform and certain result, and this has proved to be the case, to the surprise and delight of many an anxious parent.

To illustrate the action of the Turkish bath in infantile diseases, the following cases are related:

A male child, about six weeks old, was so nearly starved by the ignorant management of his nurse, that a complete case of marasmus was developed. The most important part of the child's treatment, after inaugurating a new régime, was a daily Turkish bath, supplemented by a gentle oil rubbing, which was continued for the succeeding twelve months. He was taken into the hot room and placed on his back, on a bench covered with several thicknesses of blanket, there he would lie and play with his toes and sweat freely, then he would be taken to the shampooing room and gently rubbed with soap and warm water, then a delicate spray of warm water would wash him off, after which he would be wrapped in a sheet and blanket and invariably drop off to sleep. All these processes gave him delight, and his improvement dated almost from the commencement of this course. He is now over 21 years of age, and an active member of the National Guard.

Another case was that of a boy $3\frac{1}{2}$ years old, who was taken late at night with the harsh ringing cough of croup, together with labored breathing. He was carried to the hot room of the Turkish bath. At first the heat did not seem to give relief; on the contrary, the symptoms were apparently aggravated. Hand rubbing of the arms and legs was then begun, which was pleasant to the child. An expression of enjoyment, which was his first spoken word, encouraged perserverance. Very soon perspiration began, and then the unpleasant symptoms gradually vanished. He was kept in the hot room about an hour, until his breathing was perfectly normal and the perspiration most abundant, when he was washed off and put back to bed. He went directly to sleep, had no more coughing, nor was he heard from again until after daylight the next morning. That was the last of the croup.

Another case was that of a male child stricken with infantile paralysis, as a sequelæ from an attack of eruptive fever. Both the lower limbs seemed deprived of the power of motion. The entire treatment consisted of a daily Turkish bath, followed by oil rubbing, and the result was that in a few weeks his activity was regained and his restoration was complete. Today he is a stalwart man, over six feet in height.

The internal administration of hot water and the use of the Turkish bath in diarrhea and even dysentery, has proved most salutary, both with children and adults. The use of hot water in the hands of Dr. Elmer Lee, during the last cholera plague in Hamburg, was crowned with the best results. The first stage of cholera is at once arrested by a Turkish bath. Children liable to colds and catarrhal processes in general are rendered less susceptible by the bath, and it is also a valuable tonic to the vascular and nervous system, from the agreeable impression made on the peripheral nerves. In all fevers and inflammations the Turkish bath has proved a highly important therapeutic measure. Its antipyretic effect is enhanced by the rapidity with which morbid material is eliminated from the body, and thus the cause of the fever is removed. This also includes such cases as those of erysipelas, measles, scarlet fever, together with pneumonia and malaria.

The Turkish bath has produced the most happy results in all cases of rheumatism in children, whether from hereditary predisposition, which is well known to have a remarkable influence, or as a resultant of septic poisoning from other disease, such as scarlatina. While rheumatism may be developed from a chill, yet it would not appear except from a lowered tone of the system, produced by exhaustion from some excess. Even excess of food may bring about such a result. The most reasonable theory in regard to the method in which chill acts in producing rheumatism is that the chill disturbs the nervous system, and nutrition is disturbed thereby, and that the lactic acid, or some other acid of an irritant character, is retained and acts as a poison, which produces the phenomena of acute rheumatism. While chronic rheumatism is rare in children, it is acknowledged by many of the best authorities that the means productive of the most good are hot baths.

Rheumatism in children is often followed by a large class of ailments, some of which result in veritable heart disease. All of these may be avoided or aborted by an early resort to the use of the hot air baths. Instead of being followed by an embarrassed and weakened heart, the purification of the blood renders the circulation perfect and the heart's action stronger.

Many of the drugs advocated for the treatment of rheumatism have been found useless, and some harmful and even dangerous. The fact that they are heart depressants of dangerous power negatives their use, especially with children. The use of anodynes can not be too strongly deprecated. Their action is simply to benumb or deaden nerve action, whereas the patient, at such times more than ever, needs the full integrity of the entire nervous system. Then it is that nature seems to loathe everything in the way of alimentation, plainly indicating that the digestive apparatus is in no condition for the work of appropriation. If the food is not relished or retained, it should be taken as a loud and natural protest against its being forced upon the patient. To force food then is like adding insult to injury. A copious use of hot water at such times gives wonderful relief in mitigating pain and aids materially in washing out poison from the system.

Heat, in the treatment of the diseases of infancy and childhood, is an agent so universally applicable and so readily at hand, from the tenement to the villa, that it deserves to be placed at the head of the physician's armamentarium. Among the readiest means of applying heat, where the Turkish bath is not available, is the hot compress, a simple device composed of four or more thicknesses of flannel wrung out of water as hot as can be borne. This may be placed next the body, covered by a dry one of the same material and thickness, but made a little larger—the size to depend upon the object to be attained and the age of the patient to be operated upon. One large enough to cover the entire front of the body, from the neck to the pubis, has been known to bring about a profound change in many a little sufferer, who could not tell what was the matter with him, and it has to all appearances saved the lives of many who were suffering from scarlet fever and other eruptive diseases. Cold water will dissolve most substances, but its power is greatly increased by using it at the temperature of the body, and it will dissolve most waste material that may collect in the intestinal tract and remove it by the various methods which the body possesses for getting rid of waste products. The waste substances, if not actually poisonous, are at least mechanically injurious to the body. They can either be got rid of, or allowed to get fixed in the

body, with resulting pains and headache. A sufficient supply of boiled water, drunk at the body's temperature, will remove many a source of danger. The internal use of hot water is invaluable to the infant suffering with colic, as well as to the adult suffering with sick headache. Another convenient and ever-ready form of applying heat to suffering children is by means of a hot sitz-bath, for which a common washtub may be utilized, providing that the water is as near 110 degrees as may be. Should the patient be too nervous to be introduced at that heat, it may be made several degrees cooler at first and gradually increased until the desired temperature is attained. To utilize as much of the heat as possible, a sheet should be first placed over the child and tub, followed by one or two blankets, reserving the head for the free access of air and an occasional sip of cold water. When the perspiration begins to show itself freely on the face, a successful result may be predicated. It is well to finish by washing off with cool or cold water, in order to tone up the skin and prevent what is called "taking cold" afterward. This device is capable of being utilized in an infinite variety of conditions, and when in intelligent hands has never been known to do harm, but on the contrary has brought about beneficial results in thousands of cases. With the addition of a foot-bath of the same temperature this same arrangement has produced wonderful results in children of much larger growth. W. H. Wooster, of Australia, relates the following:

A little girl about 4 years of age was bitten on the foot by a poisonous black snake. Symptoms of poisoning quickly followed, such as swelling, coldness and stiffness, the lips as thick as one's thumb, and the hollows on each side of the nose filled up level, and of a steel-blue and sea-green color. The arms, lower limbs and body were becoming blotched with irregular raised parts. The pulse became exceedingly feeble. I hesitated, as no physician was nearer than eight miles, but concluded to try the "hydropathic sweating pack," to produce perspiration. The child was placed in a tub of hot water, and blankets thrown over her, leaving the head out. This was followed by a hot wet sheet and wrapping in two blankets, closely tucked in. The heart action had almost ceased. In fifteen minutes an improvement was apparent. The dark rings around the eyes became less marked, the blue green tints less ghastly. She became conscious. In an hour she was taken out of the pack. The swelling, blotches, stiffness, had disappeared, and the patient was washed off with cold water, rubbed, and next morning she was at the breakfast table.

What is called a corn sweat has been utilized in some sections of the country. This consists of a number of ears of freshly boiled green corn, with the husks on, wrapped in cloths and placed around the body of the invalid and then the patient covered with blankets. The heat and steam from the hot corn soon brings on a profuse sweat and has relieved many cases of congestion. To give a lime sweat, take a piece of quicklime half the size of the fist and rub it over a bed-sheet well dampened, but not so wet that water will drip from it; wrap this sheet in a dry one and fold it several doubles; place two bundles prepared in this way, one on each side of the patient, in his bed; an abundant steam will come from the damp sheets and the lime, which will keep warm for over an hour; by that time the lime is reduced to a powder and can easily be removed from the sheets without injuring them. In using this method it is not necessary to give the patient warm drinks, nor to overload the bed with blankets. A balsam sweat can be given by placing a few branches of balsam in a pail of hot water and then placing in the water one or two hot flat irons—hot stones would answer the purpose— to create a plentiful supply of hot steam. The is to be placed under a chair in which the patient seated and covered with a sheet first, followed by t or more blankets to retain the heat and moistu Twenty minutes of this bath, though sometimes has been used much longer, has proved most effect to secure a thorough sweat, and the empyreumatic from the balsams contributes to the pleasantness not the utility of the bath.

Where there is a bathtub in the house a very goo sweat can be produced by running into the tub abou two inches of water as hot as can be comfortabl borne. Let the patient sit in this and lave the h water over his body, at the same time allowin hotter water to flow into the tub, continuing th process until a profuse perspiration is establishe then pull out the plug to allow the hot water to r off and turn on the cold water to wash off the bod and secure a good reaction. An alcohol sweat h been successfully used by many mothers. It consis of an alcohol lamp placed under a pan of warm wate with the child seated on a cane-bottomed chair, a then all but the head covered with blankets. This an effectual manner of breaking up a cold. A su phur bath consists of a box arrangement wherein th patient can sit with the head out. The attendan burns a sufficient amount of sulphur in the lower an rear part of this box. This produces a profuse swea in a short time, and has been used with great succes in cases of rheumatism. It is a sure cure for the itc The makers of portable Turkish baths are advertisin very freely in the papers, arrangements costing fro five dollars up that are capable of doing very effectiv work and will be found useful in many places.

All the aforementioned are but rude and primitiv efforts to accomplish what is so easily, promptly, an thoroughly brought about by that most complete o all baths—the Turkish bath. The great beauty an utility of the use of this bath in the treatment of chi dren's diseases consists in the ability to quickly abo what would otherwise prove a serious disturbanc Many such difficulties begin with what is called cold, which is otherwise a condition of repletion. T Turkish bath, by its eliminating power, breaks up th condition and quickly relieves the pressure. Resc to the bath in such cases constantly tends to the be ter growth and development of the child. We kno that every period of sickness through which a chil passes, interferes with its growth and developmen and sometimes leaves deformities in its track. F this reason the Turkish bath is to be considered o of the best friends of childhood. The pleasure wi which its processes are enjoyed is a most marked co trast to that of the ordinary treatment. The delig ful feeling of being more thoroughly clean than possible under any other process is most satisfacto and enduring. It is also invaluable in all infectio diseases, as heat destroys the germs, and renders th soil barren, thus producing unfavorable conditions i any disease to progress.

The readiness with which the Turkish bath can b accommodated to the necessities of any case, render it most admirably adapted for such work. It pr motes the natural action of all the functions of th body, bringing to every organ its equal and appropr ate nutriment. It thus aids the development of a the functions which may be deficient in activity, an secures a harmonious working of the forces throug which physical life is perfected and enjoyed. There

we have a better opportunity to attain the full measure of social, intellectual and spiritual life. Those who desire for their children the greatest physical good—and what parent does not?—should provide for them the privilege of at least one Turkish bath every week. No one thing would tend more to promote their growth and development. All who would hasten on the good time, and honor themselves, can scarce find a better field of work than that of popularizing these baths, for unless all signs fail, they will yet prove one of the greatest blessings to mankind. In order that their complete benefits may be realized, there should be large public Turkish baths established by the people, that would be readily available to every child in the land, as well as to the parents. Every city or town securing for itself this grand privilege, would find itself many times remunerated in lessened taxes for the sustenance of its paupers and criminal classes, better health and a longer term of life for its children, as well as in the general refinement of its people.

81 Columbia Heights.

CONTROL OF DIPHTHERIA.

Presented to the Section on State Medicine at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY W. K. JAQUES, M.D.

CHICAGO.

The knowledge which careful investigation has given the medical world has placed within our hands the means of controlling diphtheria—the most fatal disease of childhood—as it has never been controlled before. Just in proportion as this knowledge is made available when needed, will be the success with which the disease may be held in check. In the past, diphtheria has been in the hands of the family physician, the health official taking little or no part in the treatment, except to warn the public by a placard and insist upon isolation. But our present knowledge of the disease demands a greater participation than heretofore by municipal as well as State officials.

Diphtheria is influenced by every factor that affects the physiologic resistance of the human system. History shows that in every large city, in periods varying from seven to ten years, the disease becomes epidemic, probably due to racial and climatic conditions which cause an increased predisposition, as well as favorable conditions for the virulence and spread of germs. During the summer, or the seasons of least susceptibility, the Klebs-Lœffler bacilli are preserved in dark tenement and basement houses, and other favorable places where sunlight can not destroy them. During seasons of increased predisposition, they spread from one susceptible individual to another. The Klebs-Lœffler bacilli, inoculated on the mucous membrane, grow with a rapidity proportionate to the susceptibility of the individual. The bacilli, in their growth, produce a ptomain, very destructive in its nature, which causes necrosis at the point of invasion, and a general cell-destruction, corresponding to the degree of virulence and cell-resistance.

The symptoms caused by the invasion of the Klebs-Lœffler bacillus are simulated by several other germs, with which it is often associated. When this is the case, the symptoms of the Klebs-Lœffler bacillus may be so obscured by those of the associate germs, that its presence can not be discovered in the early stages except by the microscope. Mucus taken from the site of the invasion contains the germs exciting the inflammation, and they may be clearly identified through the microscope, after a few hours' cultivation, before the production of membrane or other clinical evidence of diphtheria.

Antitoxin is a specific in the early stages of the invasion of the Klebs-Lœffler bacilli, and the mortality increases in direct ratio as the diagnosis and administration of the serum are delayed. Then the first necessity in the control of diphtheria is an early bacteriologic diagnosis; the next, the proper use of antitoxin. Here begins the responsibility of the family physician, and upon his conduct rests the subsequent results. He must first appreciate the danger that lurks in a simple sore throat, and realize that bacteriologic as well as clinical evidence is necessary for an accurate diagnosis. Laboratory work of any extended nature is seldom possible for the general practitioner, because of the necessary time and equipment; hence this work should be supplied by those whose interests are most involved, and who are best prepared to do it. These are the officials of the health department, who are the guardians of the public welfare, and whose duty it is to help suppress anything which threatens the health of the body politic. Any contagious disease which manifests itself in the form of an epidemic is directly within the jurisdiction of municipal health officers, not for individual treatment, unless it is clearly beyond the scope of the physician, but for the provision of such measures as will enable the physician to best control the disease.

A remedy is only a remedy when applied to the particular disease it is adapted to cure. Antitoxin is a by-product of the Klebs-Lœffler bacilli, and is just what its name implies—a remedy against or opposed to the toxin produced by these bacilli. Having been made possible by the revelations of the microscope, it should be applied as scientifically as it was discovered. Following the first reluctance to use antitoxin at all, has come the tendency among some physicians to administer it indiscriminately in any and all cases of sore throat. This is not as serious in its consequences as the total omission of the remedy, for one is likely, by chance, to cure a case of real diphtheria; but it is unscientific and renders unreliable the record of its results. Given a remedy and its specific action, based upon a certain condition, and the means of discovering that condition, and the physician of today is master of a disease which for centuries has been an unconquered foe of the race.

It may be questioned as to whether or not municipal or State authorities have the right to demand certain treatment of a disease from physicians whom they have licensed to practice, after having been convinced of their ability to do so. But the majority of physicians now practicing received their medical training before the existence of much of the knowledge upon which our present experience is based. It is not pleasant to admit that some doctors who boast an experience of a quarter of a century, or even a decade, are prone to prefer this experience to "new-fangled" theories. Nothing makes a physician feel so helpless as a consultation with an old physician, who declines antitoxin with the remark that he has used iron and sulphur, and similar remedies, for thirty years, and never lost but one or two cases of diphtheria. There is no argument which will convince such a man that some of the cases may not have been diphtheria. He knows it when he sees it, though he

sees it but seldom; and the expert who treats it all the time dares make no such assertion without the confirmation of his microscope. It is this class of physicians who keep up the death-rate in diphtheria, and who make it absolutely necessary that health officers shall demand the use of such methods as have been demonstrated as most efficient in protecting the public and the individual. If the foregoing were not sufficient reason for action on the part of health authorities, there would still remain the fact that diphtheria is a disease of the poor people, and as such, requires protection and aid.

In the individual who is protected against diphtheria, there is a constant amount of antitoxin present. It is one of the products of cell-life, under favorable physiologic environment, and is carried to all parts of the body. When the mucous membrane becomes congested, the functional activity of the cells is arrested and their resistance to the invasion of hostile germs is weakened. The toxin of the invaders acts as a stimulant to the other cells throughout the body, causing an increase in the production of antitoxin. This is carried to the site of the invasion by the blood and so fortifies the surrounding tissues that the invasion is stopped. With this explanation one can understand how the Klebs-Loeffler bacilli may be present in the mucus of the mouth for weeks without producing an invasion; but when vital resistance is lowered by cold, hunger, loss of sleep, anxiety, menstrual period, or other debilitating factors, the disease manifests itself.

A high degree of physiologic resistance is the surest safeguard against all disease. This condition is only possible with hygienic surroundings; hence it is obviously the first step toward the suppression of disease, particularly of a contagious nature, to demand of the filthy man that he shall keep himself and his surroundings clean. It is a very fine line which separates the duties of the health official from those of the family physician, and the highest degree of success can only be attained by their harmonious cooperation. Health officials are dependent upon doctors for much statistic information involving time and labor, for which they are not compensated. Not only in return for this, but as a means of guarding the welfare of the public, the authorities should provide such facilities for physicians as will render the treatment of contagious diseases as efficacious as possible.

The expense of a laboratory to a community is small compared with its benefits, and when properly equipped, with an experienced bacteriologist, will prove a very important factor in the hygienic government of a city or town. The culture medium should be properly prepared or the examinations will be confusing and misleading. The change in the forms of the Klebs-Loeffler bacillus, and the modifications in cultural developments, owing to associate germs, make the identification of the bacillus sometimes difficult, Diphtheria work in all its phases is greatly facilitated by experience, and all the cultures of a community are no more than sufficient to give a bacteriologist a knowledge of the varying forms.

From a legal standpoint, it may be a serious matter to placard a house or place of business, and it should not be done unless the department fortifies itself with evidence of the contagious nature of the disease. This it can best do by making its own cultures, or by doing the work for physicians.

Antitoxin is a product which should be subjected as little as possible to the vicissitudes of commercial exchange. It deteriorates with age, and the irregular demand often leaves it on the druggist's shelf for months. When it is needed, it is usually in an emergency, when the life of a patient is depending upon the quality of the first dose of serum. Owing to the large profits accruing from the sale of antitoxin, irresponsible firms have been tempted to place an unreliable grade of the serum on the market. Foreign governments have taken measures to protect their cities by restricting the manufacture of the article. If State officials are not able to do this, they are at least in a position to investigate and satisfy themselves of the best grades on the market to be supplied. What greater service can health officials perform than to arrange for a fresh supply of a reliable grade of antitoxin, throwing careful restrictions about the distribution of that intended for purposes of charity? Delayed treatment means increased infection, and the control of the disease in the tenement districts means fewer funerals on the boulevards.

These facts furnish the basis for the plans now used in cities to reduce the death-rate in diphtheria. The predisposition to this disease is as great in Chicago as in any city of its size in the world. Its geographical situation makes it the commercial center of the United States; while the immense system of railways radiating from and through it, make it a rendezvous for all classes of foreigners, as well as an incalculable means for the distribution of contagion. Added to this are its crowded districts and its raw lake winds which have together made the city a shining mark for diphtheria. By furnishing convenient culture media, microscopic examinations, the best obtainable grade of antitoxin, and the services of expert physicians as inspectors and operators, Chicago now points with pride to a death-rate which has been reduced from 37.5 to 6.7 per cent.

In the rural districts, where these means of controlling diphtheria do not exist, the mortality is almost as high as ever. If such a reduction can be accomplished in a large city, under circumstances most favorable to the existence of diphtheria, a similar plan ought to be even more effective in country towns where hygienic conditions are most favorable to health. The methods used in Chicago can be applied and carried out, with some modifications, by the health department of any city or town. Where such an office does not exist in country places, the work can be carried on by direction of State officials with very little expense. The equipment for diphtheria work would represent but a small outlay compared with the advantages to be reaped from its protection. There is no disease of childhood which finds the unprepared country doctor quite as helpless as the malignant form of diphtheria. Without bacteriologic facilities, it usually takes several deaths to convince a physician what he has to deal with and provide for. That part of the control of diphtheria to be performed by health officials is largely by direction of effort. Previous preparation is very important and should occupy the summer months, when a physician's work is light, and he can devote time to the acquirement of knowledge concerning the morphology of the Klebs-Loeffler bacillus, and the best method of doing the work.

The fear of cholera or an epidemic of yellow fever has caused State officials to spend thousands of dollars in questionable methods for the protection of

ople: but a disease which is absolutely preventable s received little or no attention from these officials. e best authorities on the subject believe that if ildren were given the highest scientific protection, ere need not be a single death from Klebs-Loeffler phtheria. We have the knowledge and the remedy; we lack are the individuals in official life to apply em for the protection of the public.

316 Greenwood Ave.

LCOHOL ON TISSUE AND CELL GROWTH.

WHAT RECENT INVESTIGATIONS SHOW OF ITS DESTRUCTIVE ACTION.

sented to the Section on State Medicine at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY T. D. CROTHERS, M.D.

SUPERINTENDENT OF WALNUT LODGE HOSPITAL, HARTFORD, CONN.

I can only hope to point out some general facts hich have been confirmed by repeated observations many persons. Within five years an increasing terest in alcohol has begun in the laboratories, and e question of how alcohol acts on the body is rec-nized as the great coming theme. The theories of e past are called in question, and a large number of ientific men are trying to solve the problems of alco-l, only to find how complex and difficult they are. ur familiarity with the effects of alcohol are far yond all knowledge of its chemistry and pathology. e interpret the symptoms and theorize from them thout any knowledge of the actual conditions pres-t. A change has come and the question is "Why ould alcohol cause exhilaration or stupor, delirium d delusion? Why should profound changes follow use with intense degeneration and destruction of th body and mind? These questions are to be swered in the future by exact chemic and labora-y research confirmed by clinical observations.

The new physiology of modern research shows that e body is an association of cells. Each cell is a ysiologic unit, and consists of a large quantity of inute structural elements which have the form of anules. These are not alike, but assume a number different forms, differing in regard to irritability o with regard to external stimuli. Under specific imuli some of them grow and divide, while others main undisturbed. It is from a predominance of e or other of these sets of cells that the specific aracter of a cell is determined. The sum total of ese granular energies makes the life of the cell. hese are the ultimate organic units of life. In all ese cells there are specific functions, capable of ting along certain lines. All cells have functions assimilation, growth and sensibility. All have imulus and force, both chemic and physical.

The influence of surroundings is the stimulus hich calls out certain functions and activities. The rfection of life is the perfect balance of these cells function and growth. Any substance which inter-es with their specific action, changing their direc-n and movement, which disturbs their assimila-n, growth and sensibility; or which breaks up ir stimulus, force and chemic and physical rela-ns, is serious and of vital influence to the integ-y of the body. Cells may be injured, poisoned, poverished, and diverted from healthy growth, and repaired. When the injury passes a certain limit, ath takes place and no recovery follows. With these physiologic facts in mind, we are able to understand how poisons may affect the cells and tissues.

One of the prominent effects from the ingestion of alcohol in the stomach is the increased action of the heart and rapidity of the blood-current. Dr. Berkley has shown that the circulatory apparatus is damaged both by the presence of a poisonous irritant circulating in the blood-current, and the deteriorating action of alcohol on the leucocytes. These bodies are palsied and swept by the blood-stream into the cerebral circulation, and from the atonic condition of the heart muscle and the muscular walls of the arterial system not being able to force them through the capillaries equally with the red-blood corpuscles, by reason of their larger size, they accumulate in the finer capillaries which surround the cells, plugging them up partially with backward pressure on the arteries. These retain the irritant poison, increase the danger to the walls of the capillaries, and add new sources of irritation.

The leucocytes degenerate and disintegrate, and ruptures of the walls of the finer capillaries are frequent. The practical destruction of the leucocytes and driving them in masses in the meshes of the brain, together with the alcohol irritant has two specific influences on the cell: one on its nutrition and the other on its dynamic force. The nerve-cell, as we now understand, is composed of numerous dentrites or filaments, which project out from the cell body, in contiguity but not in contact, with filaments of other cells and nerves. These are altered, retracted and shrunken from the influence of alcohol.

Dr. Berkley, in describing the lessons from the action from alcohol, showing the shrunken cells, says: "One striking fact of the degenerative process is that a number of the cerebral and cerebellar cells remain apparently intact unless the use of alcohol is excessive. About every third or fourth cell shows pronounced alterations. This part does not militate against the conception of the degeneration as a pathologic entity from the standpoint of numerous forms of dementics, and chronic alcoholic psychoses, for the nerve elements of the cerebrum are intricately connected one with the other by means of their conductor endings and the knob-ended gemmulæ, between which the dynamic forces originating in the cell body, pass from one cell to the other over the almost imperceptible space that is present between the two; and thus the death of a single cell may destroy the normal relations between dozens of other cells, and in this way induce an inco-ordination of thought and action, while the majority of cellular elements retain their histologic normal characteristics."

Dr. Andriesen found that alcohol acted on the cell body, causing changes of the granules, eroding them, as it were, breaking up the normal distribution, and causing them to gather in masses like ruins. In some cases changes would start from several points in the cell body and be followed with local excavations and breaking down into little débris. The external changes of the form would be shrunken and depressed like a battered hat. The dentrites and fibrils would be shrunken and wrinkled, with small irregular swellings. These changes begin in the nutrition of the cell and its dynamic activity. Alcohol breaks up nutrition and its power of generating force or regularity, when generated. In fatigue, the form of the nerve-cell is changed, and its filaments re-

tracted, so from alcohol the same condition in a pronounced degree follows. Dr. Andriesen shows that the functional activity of the nerve-cell is suddenly increased by the action of alcohol, and its nutrition equally depressed; that both the dynamic and nutritive powers are degraded, broken up and paralyzed. The sudden absorption of the water of the cell and the intrusion of the alcohol toxins, cutting off nutrition and diverting the dynamic force, are depressant and degenerative. The result is most clearly seen in the symptoms which follow, which are so uniform as to be almost the same in all cases. These may be stated thus: diminished power of resolution, of concentration of muscular and mental energy; lowering of the moral and ethical sense; failure to get rest from sleep; nutritive derangements, and finally mental disturbances with emotional changes, delusions, sensorial failures, and so on into inanities, at first slight, then profound and grave.

The fact is well attested that alcohol even in small quantities affects protoplasm, diminishing the vital phenomena therein; this, in addition to the palsy and cessation of movement of the leucocytes in the blood, taking away the resisting power to disease, and imperfect oxygenation with consequent retention of waste material, are groups of facts well established. Prout, Smith, Harley and others, proved conclusively that alcohol lessens the absorption of oxygen by the blood corpuscles and the exhalation of carbon dioxid. Alcohol has a peculiar affinity for, at least manifests itself in changes of, the minute nerve terminations of the periphery. First, there seems to be swelling, infiltration, with leucocytes and fatty granules of débris, then thickening and inflammation, followed by degeneration and wasting of the nerve and muscle fibers. In optic neuritis, the interstitial tissue is first affected. Dr. Wilkes shows that alcohol affects the tubular and vesicular neurins by dissolving the phosphorus and protagen, and shrinking and hardening the nerve fibers. These conditions are alcoholic neuritis, and the impression prevails that it is largely due to retained products of metabolism and atheromatous degeneration of the walls of the vessels. The continued use of alcohol is followed by profound degeneration of the cells and nerve-trunks. The brain as a whole is shrunken and contracted, and serous effusions fill the spaces. The cells are also shrunken and wasted, and the nerve fibers and cells are atrophied and mixed up with connective tissue, which grows enormously.

The stomach is eroded, and contains patches of inflammation with increase of connective tissue and atrophy of the gland-cells. The liver also shows inflammation of the parenchyma and proliferation of cells and leucocytes blocking up the spaces. The kidneys show the same cumulations of the products of metabolism. Dr. Glaser proves that alcohol in moderate quantities irritates the kidneys and the augmented leucocytes, cylinders and crystals, being due to the increased metabolism of the tissues or to the alteration by alcohol of the relations of the solubility of the urine salts. The heart becomes fatty and its power enfeebled; the muscular fibers degenerate and lose their uniformity, becoming swollen and atrophied; the walls of the blood-vessels are thickened or thinned, become atheromatous and lose their resiliency; the lungs suffer atrophy and the tissue degenerates; local inflammation and irritation are present. In all cases, the use of alcohol in any form is followed by a diminution of the white-blood corpuscles or leucocytes and a diminished resistance to every condition of strain, drain, fatigue, and every form of environment which taxes the organs to adjust itself to the new conditions. Alcohol given to animals in small doses, and under various conditions has the same effect. The study of the cells and nerve fibers shows identical changes, confirming the facts mentioned. Dr. Van Gieson of the New York State Pathological Institute has pointed out the action of alcohol on the cells as erosive, breaking up the normal relation of the granular or protoplasmic matter, and corrugating the fibula dentrites. He concludes that this is dynamic and nutritive, and is cell-disturbance and cell-starvation. The function is changed and its nourishment is lessened.

A great variety of facts have been accumulated relating to the immediate action of alcohol on the body. The following may be stated as the most reliable, and generally accepted as proven: The rapidity of the absorption of alcohol is shown to be such that within a minute and a half from the time alcohol is taken in the stomach it can be detected in the blood by chemic analysis. This rapid absorption is followed by a sense of warmth, which is not clearly explained, but in all cases it is due to both vasomotor and vasoconstrictor paralysis, also to the rapid absorption of water from every tissue it comes in contact with. The capillaries are dilated, and the heart action is increased but lessened in power. The blood is changed, the white corpuscles being lessened both in number and rapidity. Careful analyses show a marked diminution of carbon dioxid after alcohol is used. The most pronounced effect from the use of alcohol is sensorial palsy. Careful measurements of the senses before and after the use of alcohol show diminution of the acuteness and the activity of the senses. This goes on to full paralysis. The mental operations are slowed and diminished and can be measured exactly. Memory, reason, perception, and all the higher qualities are enfeebled according to the amount of alcohol used. In some cases one or two drams of alcohol will show marked effects; in others a large amount is required to show this by instruments of precision. But in all cases a degree of paralysis is present which may center on some part of the body more than the other. The conclusion which is sustained by all these and many other observations is that alcohol is a poison and a paralyzant in its effect on the body. This latter action is an explanation of its peculiar fascination to all persons in all circles of society. It is an anesthetic, stopping pain, discomfort, and psychic unrest, and creating a false impression by covering up the cries of distress and the protests of nature. The defects of growth, nutrition, disease, and every stage of living, find a seductive narcotic in alcohol. Later, the degeneration becomes fixed and settled. The demand for alcohol is often a symptom of some central defect in the brain and nervous system—the same want or desire for relief as after the body is saturated with poison, only varying in degree. The ethers of alcohol are the most wonderful sleep and pain-numbing forces known. This same anesthesia is a property of all alcohol with the addition of other pronounced effects. It is a startling fact that all the theories current of the food, tonic, stimulant and medicinal powers of alcohol have no support from modern research. On the contrary, it is found to be poison of equal virulence

syphilis and other poisons. Recently alcoholic xins are beginning to be studied, and the new facts pearing in this field promise some startling discov-es. A grouping of some of these facts may be ted as follows:

1. Alcohol acts primarily on the nerve-cells, chang- their granular matter, breaking up their nutrition d changing their dynamic force.

2. This action is followed by contraction of the ntrites, swelling and atrophy of these fibers, also rinking of cell walls, as in fatigue, and coalescing d disappearance of the granular matter of proto- sm.

3. The special injury from alcohol seems to be on otoplasm and terminal fibers of nerve trunks. The itation and inflammation of the nerve walls and ers ending in sclerosis are common.

4. Alcohol acts on the leucocytes of the blood, ecking their activity, and destroying their function. ese are driven in masses by the increasing rapidity the heart, and become blocked up in the capilla-s, forming centers of obstruction and injury.

5. The use of alcohol is found to be followed by minution of the carbon dioxid and all waste elimi-tion, with a marked sensorial palsy of the senses, d a slowing up of all the mental operations. These the results of measurements with instruments of ecision, and cannot be mistaken.

6. The action of alcohol in the light of modern earch differs widely from the theories and current liefs of the day.

EREDITY AS A CAUSATIVE FACTOR OF INEBRIETY.

sented to the Section on State Medicine, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY F. C. MYERS, M.D.

KALAMAZOO.

That heredity is a common cause of alcoholism, and t alcoholism is a disease, is becoming apparent to ny medical men of the present day.

n that good old book, the Bible, we are told that he sins of the parents are visited upon the children the third and fourth generations." That has been oven to be a fact, in the evil effects produced upon e system by the use of alcohol; the person whose ain and nervous system have been injured, and ose moral and will powers have been weakened, d whose stomach, liver, and other organs have come deranged by the use of alcohol, will transmit ne of these derangements to his offspring.

The modern study of the therapeutics of alcohol s proven, without a doubt, that it is not a stimulant tonic, but an anesthetic and a narcotic, and that it ould be classed, in our works on therapeutics, as e or the other of these; and it has also been proven t it is a remedy of but little therapeutic value and e that could be dispensed with, even for medicinal rposes, with universal benefit to mankind. It is t my purpose in this paper to discuss the therapeu-s of alcohol, but to prove, if possible, that the fluences produced by alcohol are handed down from neration to generation.

The principles of heredity must have been known ancient times, and undoubtedly gave rise to family mes among the Romans, and in the present age the urbon nose and the Hapsburg upper lip are well-known family characteristics; while some families are characterized for such virtues as business integrity, truthfulness, temperance and frugality, others are as equally marked for dishonesty, mendacity and drunkenness. A marked physiognomy and proneness for commercial pursuits have been Hebrew characteristics from time immemorial. The transmissibility of an alcoholic inheritance has been very generally admit, ted by many writers, among whom are Aristotle, Darwin, Rush, Morel, Grenier, Carpenter, Richardson-Thompson and Forel. The number of cases in which an ancestral history of alcoholism has been traced is probably much below the actual amount, as it is difficult to get relatives to admit the existence of an alcoholic taint. It has been found by studying the subject, that the proportion of hereditary cases has increased 5 per cent. over the acquired during the past twelve or fifteen years. Norman Kerr says: "In over 3000 cases of chronic alcoholism I have found fully one-half with an inebriate ancestry," and about the same proportion has been the experience of others who have studied the subject in America and Europe. Kerr again says: "I have observed children born more than a year after the father had been attacked by a brain disease or inebriety, exhibit from their earliest years propensity for intoxication, and in more than one family the children could, only by constant supervision, be kept from strong drink as soon as they began to crawl." And he says also: "Nearly two-thirds of the cases of inherited alcoholism are due to the alcoholism of one or both parents." I believe it has been fully proven that the child of an inebriate, born after the lesion has been established, inherits some nervous diathesis, and that the only security is by life-long abstinence on the part of the child. Beran Lewis attributed 64 per cent. of cases of chronic alcoholism to parental inebriety, some form of transmittal neurosis, or insanity. Piper puts the proportion of hereditary to acquired cases as 2 to 1.

In the examination of two groups of ten families each, in a children's hospital of London, one group of 57 was affected more or less by alcohol, the other of 61 was unaffected, or slightly so. Of the first group 20 had inebriate fathers, the mothers and grandparents being moderate drinkers; only 45 per cent. of these had healthy constitutions; 31 had inebriate fathers and grandfathers, but temperate mothers and grandmothers; only 2 of these, or a little over 6 per cent., were healthy. Of the 61 children belonging to the temperate families 82 per cent. were in good health.

The customary drinking of light wines and champagne at banquets and public dinners has been thought by many worthy people in the past, to be perfectly harmless, but as more light is thrown upon the subject of heredity and the therapeutic action of alcohol, that custom will gradually be abandoned; in fact, it is becoming less customary at the present time. There has never been a time in America when every indication pointed so strongly to a decrease in intemperance as at present. There has never been so little drinking as at present, and never such a strong tendency toward moderation in quarters where alcoholic indulgence is general. The most careful figures bear out this statement, That hereditary craving for strong drink can be transmitted by parents who have not that craving, but who drink very moderately, has been proven. Forel says (*Medical Pioneer* of December, 1893): "Hereditary crav-

ing for alcohol may proceed from parents neither of whom possessed this craving, but were drinkers only by custom or sociability."

Not being connected with any inebriate institution my experience is limited to that of a general practitioner, but a typic case came under my observation a few years ago. A man, born and educated in Edinburgh, Scotland, whose parents were wealthy people, but who had been in the habit of using light alcoholic drinks in the form of wines—as many Scotch families do—came to this country, entered business, and was a very bright business man and honest in all his ways, but from every month to three months—never going over three months—he would leave everything and enter upon a drunken spree. It made no difference how much was involved in business interests. As he was under my observation for two or three years, I know that it was against his will and purpose, and that he made every effort to overcome the hereditary power that was controlling him. It was usually from two to three weeks before he was ready for business again. He was a person of much moral purpose and great business integrity when himself, and has told me many times that he always had a periodic craving for alcohol ever since he could remember; he had one daughter born to him who is a nervous uncontrollable child.

Another case of a bright young lady was under my observation for a year, who, every few weeks, from her earliest memory, had such a craving for alcohol that it seemed impossible to resist it. After taking a few swallows of diluted whisky she was satisfied, the craving for it ceased and her nerves became quiet. As she was a person who never had been in the habit of drinking, only in this way, the craving was undoubtedly from a hereditary source. Many other cases might be referred to, but as there are those here who have made that subject a special study and who would naturally see many more cases of the kind than a general practitioner, that part of the subject will be left for their consideration.

In conclusion I would ask: If one of the principal causes of inebriety is heredity, how is this form of inebriety to be cured and our future generations saved? I know of but one way, and that is to stop the drinking habit at once. As it has been proven that: 1, alcohol is not a food; 2, it does not promote digestion; 3, it does cause gastric disturbances; 4, it does not increase muscular strength; 5, it is not a tonic or stimulant, therefore I believe medical men ought to do all in their power to educate the rising generation in regard to these facts, and that alcohol should be classed in its proper place—with anesthetics or narcotics—and everything possible done to prevent its universal use as a common beverage in social and political life. By so doing inebriety may be practically wiped out of existence in one generation, and a blot removed from this fair earth of ours, which would be an untold blessing to thousands of families.

Rest in Chorea.—Van Bibrer reports twenty-five children cured of chorea during the last year by keeping them in bed, the muscles arranged in the manner most conducive to repose, with conscientious massage three times a day; the diet nutritious and abundant. Medicines can be given if desired, as the patient is in the best condition to take them. Rarely was he obliged to keep the child in bed over a month.—*Journ. de Méd. de Paris*, October 20.

ISOLATION IN A GREAT CITY, HOW BEST ACCOMPLISHED.

Presented to the Section on State Medicine, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY SAMUEL P. DUFFIELD, M.D.
EX-CITY HEALTH OFFICER.
DETROIT, MICH.

Subsequent to the fourteenth century, when the plague passed that gate of quarantine between infected districts and the civilized nations, *the world began to think*. Physicians and chemists turned their attention to *causes* of disease, and from the advanced knowledge obtained boards of health were developed. It was found that pecuniary loss from sickness and pestilence was so great that steps were taken to guard against the spread of contagious disease, and the laws of the land in regard to public health have gradually and surely developed into a system which has been successful in warding off these diseases and preventing serious epidemics. This was the first tree, tender and young, which, planted in the gloom and despair of a plague-stricken people, bears fruit today, "for the healing of the nations."

Our health laws and ordinances, pestilences and plagues have been great reformers. Old Pharaoh was no believer in bacteriology. He was like the third-class criminal lawyers, who like a *Bombastes furioso* in their pseudo-eloquent appeals "about the inalienable rights of the American citizen" to a jury that do not know what a bacillus or a bacterium is, and who can not see the use of such things in everyday life, because they are "practical men" and believe in "common sense," and see no reason why they should adopt every fad the doctors choose to "force upon the public." For his neglect of studying the laws of nature, Pharaoh's kingdom was overrun with pestilences of various kinds, and finally preserved for future reference in brine, to which, metaphorically, we would also consign the ignorant third-rate criminal lawyer who sometimes manages to be appointed as health commissioner, claiming he is a practical man.

Contending with such difficulties as have been foreshadowed, the local health officer finds it difficult to even enforce the municipal ordinances, as the sympathy of the jury is usually in favor of the "poor man, who did not know any better," and who has, in their opinion, "suffered enough already," even if he has brought it upon himself by gross carelessness. But in spite of the above obstacles there has been an advance along the line, by local health officers. Since the introduction of antitoxin we have reduced the mortality of diphtheria, as the following statements will show: Diphtheria is most prevalent in cities. During the last twenty-five years it has become epidemic in most of the larger cities in the Northern and Western States, from the Atlantic to the Pacific coast, following the lines of travel. The permanent establishment of diphtheria in the centers of trade, and the fact that many grown people have this disease in so mild a form that they are not aware of it, and innocently mingle with others in places of amusement, inevitably tend to disseminate this disease throughout the country.

In Europe it has boldly established itself, even in centers of medical education. In Paris, London, and Vienna it has been of late the subject of much discussion and investigation. In Europe and America the literature of diphtheria has greatly increased dur-

ing the past ten years, by reports of cases, histories of epidemics and statistics of results of different modes of treatment.

The fact that diphtheria virus can be carried in clothing long distances without losing its virulence is now generally admitted by those who have made many and careful observations. Trousseau has said that diphtheria does not spare any age, but it is most common between the ages of two and six years. Observations which I have made during the years 1895–1896, and cases and deaths which I give in tabular form below, show that up to the age of 9 years in the year 1896, 90 per cent died, while from 10 years on to 74, there were only 10 per cent. of the total deaths of diphtheria. According to M. Barthez, in St. Eugenie Hospital, during twenty years, the ages of diphtheria patients were as follows:

AGE.	CASES.
Under one year	81
1 to 2 years.	314
2 to 3 years.	319
3 to 4 years.	292
4 to 5 years.	200
5 to 6 years.	103
6 to 7 years.	59
7 to 8 years.	36
8 to 9 years.	59
9 to 15 years.	82
15 to 17 years.	2
Total.	1547

The total number of cases from under 1 year to 17 years, inclusive, is 1547. From under 1 year to 8 years we have 1404 cases, and from 8 to 17 years, inclusive, there were 143 cases. Hence,

$$1547 : 1404 :: 100 : x = \frac{140400}{1547} = 90.7$$

90.7 per cent. of the cases occurred from under 1 year to 8 years, while

$$1547 : 143 :: 100 : x = \frac{14300}{1547} = 9.24$$

Only 9.24 per cent. occurred from the eighth year upward to the seventeenth year, inclusive.

Now take the death-rate as it appears in the city of Detroit and you will find that it follows closely the same rates.

MARCH, 1896, TO FEBRUARY 28, 1897.

AGE.	DEATHS.
Under 1 year	11
1 year	28
2 years	54
3 years	29
4 years	35
5 years	31
6 years	22
7 years	12
8 years	12
From under 1 to 8 years	234

$$260 : 234 :: 100 : x = \frac{23400}{260} = 90 \text{ per cent.}$$

9 years	4
10 years	4
11 years	4
12 years	2
13 years	1
14 years	2
15 years	1
16 years	1
24 years	1
25 years	1
26 years	1
30 years	1
37 years	1
43 years	1
74 years	1
From 9 to 74 years	26

$$260 : 26 :: 100 : x = \frac{2600}{260} = 10 \text{ per cent.}$$

Total deaths from diphtheria. 260

It will be seen that out of 260 deaths which occurred from March 1, 1896, to Feb. 28, 1897, 90 per cent. of the deaths properly chargeable to diphtheria were below 9 years of age; while from 9 years upward to 74 years the rate was only 10 per cent. You will perceive what havoc the contagion makes in the earlier years of childhood. The figures given above teach a peculiarly sad lesson. They show how carefully children of ages ranging from 1 year up to 9 years should be guarded. How sedulously gatherings of children, when coming from homes whose surroundings are not known, should be avoided. It would be well for ladies who send their children to kindergartens to weigh well these figures.

The home of every pupil of the kindergarten should be visited by a ladies' committee, composed of mothers, that they may know positively what influences may be at work from the individual scholar. The teacher of these tender little ones should be subjected to a scrutiny far more searching than the teacher of the higher grades. She should, in her mode of life and circle of acquaintance, be above all suspicion of coming from or visiting any house in which there is a case of sore throat, or any child suffering from a rash, or in fact, any sick child. Such a percentage of death should warn all mothers who can afford to do so, to teach their children at the mother's knee. I am aware from personal observation that there are many poor laboring women who have no time to devote to their children. It is unfortunate that this is so, as the mortality rate plainly indicates that the danger to children of 5 and 6 years is very great. This danger is not confined alone to diphtheria, but is apparent also in cases of scarlet fever. You will notice from the figures on that disease, which I give below, how nearly the same percentage runs through the years from 1 to 8:

AGE.	DEATHS.
Under 1 year	1
1 year	2
2 years	9
3 "	2
4 "	6
5 "	4
6 "	3
7 "	2
8 "	1
From under 1 to 8 inclusive	30

$$33 : 30 :: 100 : x = \frac{3000}{33} = 90.9 \text{ per cent.}$$

That is, from 1 year to 8 years, inclusive, the death rate is 90.9 per cent.

AGE.	DEATHS.
12 years	2
13 "	1
9 years upward	3

$$33 : 3 :: 100 : x = \frac{300}{33} = 9.09 \text{ per cent.}$$

From 9 years to 13 years and upward only 9.09 per cent. of the total death-rate for scarlet fever died.

During the year 1896 antitoxin was used as a remedy, and through observation and tabulation of the cases and deaths in the city of Detroit we find a death-

rate of 12.58 per cent. where antitoxin was used. May 1, 1896, the Board of Health of the city of Detroit began furnishing antitoxin free to those patients too poor to pay for it. This included poor patients under charge of the city physician; poor patients at Harper Hospital, sent there by the Board of Health; at the Women's Hospital and Protestant Orphan Asylum. Total diphtheria patients treated with antitoxin were 374, with 47 deaths. Total doses for immunizing, 119. Failure to immunize, 25. There were dispensed 643 doses, representing 493 patients, a seeming discrepancy of 150 doses. This is accounted for by the fact that in many cases two and sometimes more doses were given to one patient.

	CASES.	DEATHS.	MORTALITY RATE.
Antitoxin	374	47	12.56 per cent.
Other treatment			
Without antitoxin	467	163	34.90 per cent.

Percentage in favor of antitoxin, 23.34.

The total cost of antitoxin for these cases was $1,234.45.

TENEMENT HOUSES.

I would call attention to the fact that in building tenement houses, they are constructed in such a way as to defeat any efforts in attempting effectual isolation. Ordinary houses are rented and occupied by several families, sometimes as many as four. There should be *some* remedy. Whenever a case of contagious disease develops in such a building it becomes our duty to placard and place in quarantine the family in which the disease occurs. This may seem a very easy problem to solve, but it is in reality one of the hardest that the Health Board has to grapple with, for several reasons. *Isolation can not be perfectly maintained.* More than one family occupies the house. Those families in which there is no sickness can not be quarantined; and all we can do is to seal all entrances to a common hall, so as to prevent them from mingling with those not in quarantine. An economic council or board of aldermen consider it too expensive to have guards or inspectors. It costs the people too much.

Our inspectors are asked, by those who realize the fearful danger from diphtheria, why the health officer does not order the case to the hospital. They are informed that if the patients are willing, the health officer will send the patient to the hospital, at the expense of the health department. It may be that the patient is a little child, a mere babe, and the mother inquires if she can accompany her babe. On being informed she can not, as the hospital authorities will not allow it, she refuses point-blank to allow the child to be taken. She will stay at home with the child and nurse it, endangering the other children, simply because she will not allow the child to go to the hospital. It must be apparent that for the tenement-house patient, the Board of Health should make an arrangement by which we could have cottages of refuge for diphtheria, and also for scarlet fever cases. I find by conversation with mechanics and their wives that they would gladly avail themselves of such a place, were they assured that one of the parents, preferably the mother, could accompany the child. The father, in case the mother refuses to let the child go to the hospital, must have his house quarantined, and if he wishes to continue work he must board away from his infected house. Under the "Cottage of Refuge" system he could come home to the remainder of the family at night, to a home which has no infection in it, and from which he goes on the morrow to work without danger of infecting other people. There is no germ to be carried in his clothing.

I have often been met with the remark, "Why not force the father and mother to give up their child and take it to the hospital for the benefit of the community?" The sanitarian who says that on paper would feel differently if he were to individually put it to the test. There is nothing in the world so strong, so clinging, so self-sacrificing, so self-denying, so beautiful in its freedom from selfishness, so bold and courageous in the defense of her babe, as the love of an anxious mother. Fearful sometimes themselves of the terrible pestilence which swept Detroit city only two years ago, when told that the child had it and must go to the contagious disease hospital, they refused to allow it to be taken to the ambulance unless they could accompany it. I took always one of the parents, sometimes it was the mother and sometimes the father. I usually let them decide that question between themselves, husband and wife, as to who should go with the child to the smallpox hospital. My experience with these people has led me to realize that unless we allow the mother to go with the child we will fail in the majority of cases, for the reasons given above.

What is true of smallpox is equally true of diphtheria. Tenement houses are the hotbeds where virulent forms of diphtheria are cultivated, and from these culture-beds the poison is spread through the city. It reaches the homes of splendor and luxury from just such places, from cases which are not known until the death certificate comes in, signed by the physician, "Called in just before the child died." The cottage refuge system would relieve this state of affairs materially. In order to carry out this system satisfactorily, the Board of Health should be untrammeled by *political* appointments, either on the board itself or among its employes.

THE RIGHTS OF THE PUBLIC IN DEALING WITH THE DEFECTIVE CLASSES.

Presented to the Section on State Medicine, at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7-10, 1898.

BY ALFRED WILMARTH, M.D.

SUPERINTENDENT OF THE WISCONSIN HOME FOR FEEBLE-MINDED, CHIPPEWA FALLS, WIS.

The care of the dependent classes has been a matter actively before the public for many years, and in its rapid evolution has now assumed such proportions and carries with it such enormous expenditures that its growth and possible curtailment are questions of grave importance. We can justly pride ourselves on the admirable system and vast extent of our charities, but we can not but realize that they constitute a tax of no small importance on the income-earning portion of our population.

The last census states the number of blind in the United States as 50,411, of deaf and dumb as 80,6[illegible] of feeble-minded 95,571, and of insane as 106,[illegible] The two first-named classes are not wholly dependent and are very often entirely self-sustaining, and money spent in their education is well spent. The classes who nearly or entirely live on the public are the insane and imbecile, the pauper, habitual criminal and the tramp.

The treatment of the pauper and the tramp belongs more properly to the sociologist and local magistrate

than to the physician, although they merge into the other classes in such a way that there is no sharp dividing line. It is to those dependents whose condition is due to physical degeneracy or diseases that I wish to particularly call your attention.

The census report on the insane gave the total in round numbers for the country at 92,000 in 1880, and 106,000 in 1890; for the feeble-minded at 76,000 in 1880, and 96,000 in 1890. It is probable that the enumeration of the insane may be far more accurate than that of the feeble-minded, as the higher grades of imbecility are often not recognized or at least not acknowledged by relations, and past investigations have shown that a large proportion of these are not acknowledged to census officers. Even with these figures we have over 200,000 in these two classes. At an average weekly cost of $2.50 a week, which is probably an underestimate, the actual money cost of their care amounts to over $2,000,000 each month. To this must be added the cost of the care of the habitual criminal, the dependent children, the vagabond and the habitual drunkard. So varied are the demands for the support and relief of all the dependent that we find that the New York State Board of Charities expended nearly eight and a half millions of dollars in 1880, and nearly sixteen and a half millions in 1890, although the population of the State increased less than 20 per cent. in that decade. And this startling amount represents the expenditure in one State only. These few figures demonstrate, as well as many pages could, not only the burden which rests on the more thrifty and stronger members of our community but also its constant increase. Carry these figures through the many States of the Union and realize their enormous total.

If we look closely into the lines along which this army grows we will begin to see at once that certain families contribute very largely to the total. The history of the "Juke" family has been often quoted. I took occasion two years ago to call your attention to the history of "Margaret, the Mother of Criminals," whose progeny of paupers, beggars, prostitutes and criminals reached 700, their family vigor being preserved by intermarriage with vigorous families of ruffians, some of the women bearing as high as twenty children. I also referred to the "Tribe of Ishmael," where the offspring of one neurotic man intensified by consanguineous marriages numbers some 5000 individuals "whose continued criminal record has poured over the Northwest a flood of imbecility and crime." I want to add to this a family recorded by Prof. Belman of the University of Bonn. They are the offspring of a notorious drunkard who died in 1800. His descendants number 834, of whom 709 were traced from their youth. Seven of these were convicted of murder; 76 of other crimes; 142 were professional beggars; 64 lived on charity, and 181 of the women of the family lived disreputable lives. The family cost the German government for maintenance and costs in public institutions $1,250,000—in other words, $1,500 each. These are extreme instances, but instances on a smaller scale may be found by any one who cares to look for them. I now have a family in mind where there are seven children, all feeble-minded, and the daughters are bearing illegitimate children to form a third generation of weakness, perhaps crime.

The vast majority of authorities testify to the truth of the transmission of ancestral characteristics as shown in these examples. Through the channels of transmitted nervous weakness and inherited moral taint the vicious stream flows and multiplies. Checked somewhat in its course at times, but not fully eradicated, it will resume its flow whenever conditions are favorable. To show the persistency of the degeneration, it sometimes happens that a feeble-minded woman will bear children by several different fathers, and all will present the mother's weakness, sometimes intensified. With such proof that neurotic weakness is directly transmitted in all its forms; with the knowledge that this heritage has been accumulating for perhaps several generations, we can hardly expect it to disappear in a brief period of education, or a sound mental and moral condition to be created from a weak one in any limited time. Education may do much for them in the way of increasing their power of self-support, but can never eradicate the characteristics which are their birthright and which are bound to pass from them to their children, to lie dormant if their surroundings be fortunate, or to readily spring into activity under the stimulus of unhealthy surroundings or example. Now, is it not wise that such individuals should die without increase, allowing healthier stock to perpetuate our race?

I have dealt at some length on the money cost in their support, but that is not the only evil incident to their existence. Their evil example is always before the children of the community. The insane man or woman is, furthermore, a constant menace to the safety and even the lives of our citizens. Look up for one month the number of assaults and murders committed by the insane and his near relative, the drunkard. The murder of whole families is not so infrequent, and the awful murder of Terriss, the actor, by the eccentric Prince is only one of many crimes which come like the lightning-stroke from those who have been regarded as amusing subjects for sport or avoided as bores from their inordinate egotism.

The family whose members have not sufficient intellect to establish a decent support for themselves and not sufficient moral strength to refrain from petty crime is a neighborhood nuisance, as any one can testify who has lived neighbor in their vicinity. How shall the rights of the public be sustained in this matter? For the little ones, the numerous child-saving institutions are at present doing a great work, placing the children among good surroundings and giving them every advantage of development. A certain proportion of these waifs can not develop, and they come back upon the public for care. For such persons as are definitely determined to be permanently defective we have three radical methods to prevent further increase: 1, sequestration; 2, prevention of marriage; 3, surgical interference. In many ways the public has taken the ground that the welfare of the many shall take precedence over the liberty of the few. The man who unlawfully takes his neighbor's property, even in small amount, is promptly imprisoned. The insane man becomes dangerous to his neighbor or himself, and is confined until danger from his being at large is supposed to be removed.

The man who wilfully inflicts bodily injury on his neighbor is taken in hand by the law, and conditions placed over him to prevent his doing so again, either by a money fine or imprisonment; or he may be placed under bonds, or imprisoned, if it is known that he intends to repeat his offense. On the other hand, a neurotic man may marry a neurotic woman and

bring into the world nine beings, as I have stated, to live a lifetime of suffering. An insane man may go home to his family during his better periods from a hospital and resume his family relations and cause the birth of other beings, who stand much more than a chance of a miserable life. And in very few States is this discouraged.

The imbecile may marry, and marry pretty often, and the taxpayer supports the fruits of such a union, often with money that represents much self-denial, and perhaps should be spent in the better education of his own promising offspring. A woman recently wrote me, "My husband died, and as I had *no other means of getting a living*, I married again. That man left me and I have married another!" She wished to dispose of her imbecile boy.

As I have already said, there are three methods of meeting this evil. 1. The woman may be sequestrated. The question of "personal liberty" may come up here. But personal liberty is not desirable when it can bring nothing but harm to its possessor. Let the imbecile woman gratify her maternal instinct of caring for the little ones in caring for the little children in an institution. The bearing of children, when it is only the fruit of passion, without any adequate sense of the responsibilities entailed, should never be. It is no especial hardship for any defective woman to spend her life in a modern institution with every comfort furnished her and with congenial companionship. She loses only responsibilities she is unfitted to assume, and escapes dangers of which she has no adequate conception. Such a step ends her danger as a multiplier of her own weakness, and the present rapid increase in our dependent population would at once diminish.

2. The passage and enforcement of more stringent marriage laws. Laws have been passed in several States to this end, imposing a large fine on those who will, for a larger or smaller fee, perform the marriage ceremony in such cases. With the State caring for the women who have not the mental or moral strength to care for themselves, and the law preventing the marriage of those known to be insane, epileptic or habitually criminal, the production of the unfit will surely be greatly controlled and the public far less alarmed when the great number and cost of support of the dependent is brought to light.

3. The adoption of surgical measures for the prevention of the further increase of such defectives as threaten to be a life burden is coming more and more into prominence. It has been boldly advocated by some prominent in the work. Few men, when their attention is earnestly called to the matter, can urge any very strong objections against it. It would not be necessary, if it were possible to fully carry out the idea of sequestration and prevention of improper marriages to complete success, but neither of these provisions are so surely effective as this radical measure.

The farmer knows that he can exterminate the weeds most thoroughly from the ground, which should bear only life-supporting grain, by seeing that they do not seed. For those who with no right to have offspring, yet will offend against both morality and law, the surgeon may yet be called upon to follow the example of the farmer, and by operating, guard society from the contamination and burden of the increasing number of those whose lives should never be begun, and by a comparatively safe operation make parentage impossible. The public are not thoroughly alive to this matter, simply because they are unable to see the evil in its aggregate importance, and when they do awake to its magnitude much sentiment will be replaced by earnest, business-like methods of suppression and control. The time may even come when continuous births of defective children in one family may be thought of sufficient gravity for a forced separation of the parents. The idea of nine helpless ones being born into a community does not seem consistent with modern civilization. Yet I know of two families where such a tragedy has occurred, and many more where from three to seven have been born.

I have ventured to bring this subject before you again because it is one of the great social problems which lie largely in our province to solve, and to which it is our duty to give our most earnest thought, and I ask for it your aid, if on mature thought you find that the views here advanced lie in the line of true reform.

THE WATER-SUPPLY OF CITIES.

Presented to the Section on State Medicine, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7–10, 1898.

BY C. F. ULRICH, A.M., M.D.

WHEELING, W. VA.

This is one of the burning questions of the hour. It is not because there is a lack of water. We have an abundance of streams, from the smallest brook that rushes down the mountain side, meanders through the fields and meadows, between flowery banks, over gravelly beds or through rich soil in cultivated bottom lands to the great Father of Waters, fed by the hundreds of streams permeating the immense territory spread out in magnificence between the Alleghenies on the east and the Rocky Mountains, rearing their lofty summits to the sky on the west. This vast system of streams carries the almost unlimited supply of water that falls from the clouds, by day and by night, down to the boundless ocean, rendering the magnificent valley of the Mississippi the fairest, loveliest and most productive portion of the surface of our terrestrial sphere. We have the immense chain of lakes from Superior to Ontario—that beautiful system of inland seas that divides the "Land of the Free and the Home of the Brave" from the British Possessions on the American Continent.

We can not, therefore, complain that, in a general way, there is a scarcity of the aqueous fluid; although when the burning summer sun pours down his scorching rays upon the thirsty surface of the earth, the rains cease to fall, the brooks dry up, the creeks diminish in volume, the rivers grow narrow and shallow, not permitting boats to navigate them, and in places even becoming fordable. Yet, in the main, there is water enough in the streams to supply the wants of the population living upon or near their banks.

What is it, then, that makes the question of the water-supply such an urgent one, causing so much complaint, so much anxiety; giving rise to so much contradictory legislation? Sixty years ago we hear nothing about the water troubles. People had their springs or wells, from which they procured water for drinking and cooking, while for washing and cleaning they would catch rain-water in barrels and cisterns, or they would haul water from neighboring streams, leave the barrel standing near the house until the supply was exhausted, and then make another trip

the stream. Even now, in some antiquated cities of Southern Europe, Asia and Africa, there are water-carriers, who supply the population with water, hauling it in a cart, carrying it on the back of a mule or donkey, or even on their own backs. With the modern ideas of comfort, convenience, cleanliness and health such primitive means of supplying water would be absurd. The population of the earth has increased at an enormous rate during the last century, and the general tendency has been to congregate in cities; so that now a city numbering less than 100,000 inhabitants is counted little better than a village, and several cities number their inhabitants by the millions. Now the problem of furnishing such immense accumulations of people with a sufficiency of water for all uses becomes much more difficult than a superficial observer would imagine.

There are conditions essential to make the water-supply of a large city what it should be, and in many places, one, or even two, of these are wanting, while in some even all three are deficient. These conditions are: a sufficient quantity for all possible emergencies; clearness, i. e., apparent purity; and healthfulness, i. e., freedom from disease germs.

Let us first consider the question of quantity. There is a vast increase in the amount of water used now over that used fifty years ago by the same number of people. Why is this? Do they drink more? No. Do they wash more? Probably; because they have made some progress in cleanliness. Have they more cattle and horses to water? No; for steam and electricity have diminished the demand for horses; and the number of cattle, in proportion to the population, has not been increased.

Let us see what has caused this great demand for water in excess of what was formerly required. In very densely populated city the sources of disease are necessarily increased. The air is contaminated where people are closely crowded together. How that can be corrected by the copious use of water will be explained farther on. The excreta of men and animals contain much that is unhealthy, even when not charged with disease germs. This necessitates much water to remove them and clear away their traces from the places where they were deposited. The streets want to be cleaned, the alleys and stable-yards cleaned out, the sewers flushed. A variety of apparatus must be employed to remove filth, which either contains the disease-producing bacteria or forms a good nidus for their propagation; all of which requires large quantities of water. But there are other causes for the increased demands for water, as, for instance, machinery. Half a century ago, much of the manufacturing was done by hand, which required but little water. Now we have steam-engines for driving all sorts of machinery, and for putting electric dynamos in motion, also water-motors; all of which use up great quantities of water.

The water-motor especially, in which class is included the thousands of elevators found in every city, consumes enormous quantities of water. Formerly the merchants had buildings two or three stories high, and when they wanted to go to the upper part of the house they walked. Now their buildings are from six to ten stories high; and the sky-scrapers, built principally for offices, reach the enormous height of twenty to thirty stories. Now, how do the occupants ascend to these dizzy heights? It is by means of elevators or lifts, which are run mostly by water-power, and some by electric motors. Every restaurant and saloon has a motor to bring provisions from the kitchen, beer, ale and wine from the cellar, to run the fan in the summer to enable the customer to keep cool, while being heated up with the drinks they take, and for many other uses.

The average citizen knows very little of how much water is required for such purposes. I never had the least idea of the enormous quantities of water that are consumed until I became a member of the water board. Then there are the fires that occur in large cities, where whole blocks and sections would be destroyed if the fire department with its vast consumption of water did not come to the rescue. In order to preserve the health of the city, frequent cleaning of the streets and flushing of the sewers are necessary. The sprinkling of the streets done by individuals in front of their houses, although consuming a good deal of water, does not contribute much to the cleansing of the city. This work, in order to be effective, should be done on a large scale by means of the fire-hose, which prevents the dust, charged with disease germs, from rising and exposing all who breathe the dust-laden air to the danger of contracting disease.

In order to meet all these wants it is essential to have reservoirs large enough to hold a sufficiency of water to supply the city for at least a week. For, if any accident should happen to the machinery to disable it for several days, and the reservoir is too small, great suffering would be entailed on the city. When the citizens of Wheeling, W. Va., my home, were informed that our reservoir, which they had always believed to be ample for our wants, had to be filled from two to three times in twenty-four hours to keep the city in water they were thunderstruck, requiring a sight of the daily records of the waterworks to be convinced. If the waterworks are owned by the city, as is the case in Wheeling, the city fathers would see to it that a sufficiency of water is provided to meet any such emergency. In our case, the city council, not seeing their way clear to spend the large sum necessary to build a new reservoir, sixteen or seventeen times as large as the one we now have, did the best they could under the circumstances, giving the water board permssion to establish a new pump of sufficient power to keep the city from a water famine in case of accident; kindly permitting the board to pay for it out of the receipts from the water rents. Should a stock company own the waterworks, the city government would either compel the company to provide for all contingencies or would annul their charter and establish a pumping station of its own, unless they had been foolish enough to grant a perpetual charter.

Another advantage of a large reservoir is, that it affords facilities for connecting a filtering apparatus, which brings us to the second part of our subject—clearness of the water. Although filtering does not clear the water entirely of disease germs, it does so to a great extent; for they are more apt to attach themselves to the solid material that is found in the water. Besides, filtered water has a decided advantage over that pumped directly out of the stream. It is more palatable and more pleasant to drink; it does not nauseate you when you raise the glass to your lips and make you wish you had a glass of beer instead; it is better for washing clothes and cleansing of every kind. Besides, the filth that is found in the water during and immediately after a rise in the river brings

disease as well as disgust. I will not here enter into a discussion of the relative merits of the two great systems—the English or sand-bed filter, and the American or mechanical filter—that being a subject for an association of water boards rather than a medical association. Each one has its peculiar advantages and disadvantages. From the very limited investigation I have been able to make, I prefer the sand-bed filter, where a suitable location can be had, where the right kind of sand is easily accessible, and where money is not too scarce, because in this system no foreign substance is required, such as alum or similar substances, which are indispensable with a mechanical filter, for the purpose of coagulating albuminoids.

I will incidentally mention that a filtering apparatus, improperly cared for, is worse than useless. It would act simply as a store-house for filth and bacteria of every kind, which would remain in the filter. Then, when clear water passes through, it will be itself contaminated by the filth left in the filter from former masses of impure water that had passed through. Therefore, whenever a filtering apparatus is established in connection with a reservoir, ample provision should be made for cleaning it regularly, with special care after the occurrence of high water. When the plant is owned by the city, all these things can be attended to by the proper authorities, among whom the health officer, with his staff of assistants, should always be included; because a great many questions come up, in the management of filtering apparatus, that affect the health of the inhabitants. From the experience our little city of Wheeling has had, I would very strenuously advocate the city ownership of all the works pertaining to the water-supply; so that the city authorities may have entire control of the whole business. There is, however, one disadvantage in this arrangement. I mean the political favoritism that is shown in the selection of officials and operatives, which works harm to the service by handicapping them in the performance of their duty, they being to some extent subject to the caprice of the voters. Or, if they adhere rigidly to their idea of what is right, they are subject to being turned out on a change of administration, perhaps just in the midst of some important improvement they are about to carry into effect. Notwithstanding this drawback, which should not be permitted to exist and which could easily be prevented by establishing a civil service list of all officials and operatives whose frequent change would be detrimental to the service, the city ownership of waterworks, gasworks, electric street-lighting, etc., should, in my opinion, be insisted upon in every municipality.

There is one question arising here, which seems to me to be of considerable importance. I said, in the beginning of this paper, that only a small part of the water furnished to a city is consumed by families for drinking, cooking, washing, and other domestic uses. The great bulk of it is used for street cleaning, quenching fires, flushing sewers, running machinery; all sorts of motors, lifts, elevators, etc., which are propelled by water-power. It would seem to be a great waste of labor and money to filter water used for such purposes as that, from which no benefit whatever would be derived. My suggestion would be to filter only such an amount of water as is consumed for domestic purposes—drinking, cooking and washing—besides any fine mechanical work in the prosecution of which clear water is essential. This would make a very great reduction of the expense of filtering, without invalidating its utility. But here the objector will come in and say: "How can that be done? Can you send filtered and unfiltered water through the same pipes?" Certainly not. You would have to establish two reservoirs and two separate systems of pipes: both to be supplied from the same pumping station. This would entail considerable expense at the beginning. But the great saving in the cost of filtering would, in a few years, wipe out the additional cost of reservoir and pipes. I throw out these ideas simply as suggestions to induce reflection and study on the subject, leaving it to specially trained minds to make the necessary calculations, and decide on the feasibility of the plan. The proportion of bacteria that can be removed from the water by filtering I am not prepared to determine, but I know that from 75 to 90 per cent. are claimed by various contractors. I believe that one firm has gone so far as to guarantee 97 per cent. If this is the case, which I am not prepared to assert, having made no microscopic examination of water before and after filtering, there would be very little more necessary to bring about the third condition; i.e., the purity of the water, or its freedom from disease germs.

So far as I can see, nothing more can be done by public works, and, if private consumers want a greater degree of purity, they must boil it in their homes after receiving it filtered from the waterworks. Many families have been boiling their drinking water for a number of years. But to boil unfiltered water renders it unpalatable, and generates disgust in the one drinking it; so that an unwillingness to drink water ensues, and many persons resort to beverages that are injurious, damaging the consumer both in body and mind. In connection with a filtering apparatus, an arrangement for aërating the water would be of great service. When water is entirely devoid of air, it tastes flat, lacking that exhilarating quality that makes water so pleasant a beverage, enlivening the tired laborer and making him prefer a cool draught of fresh, aërated, ozonized water to beer, or any other of the customary drinks consumed by the masses of laboring men, while it promotes the health and liveliness of children, improving their digestion, assisting in the assimilation of their food and causing them to grow up to be strong, healthy and happy men and women. The method of aërating the water in connection with the filtering process I am not prepared to discuss at present. I am, however, giving the subject some attention, and may possibly be able to furnish a paper on it and kindred topics on a future occasion.

How to prevent the pollution of streams from which the water-supply is taken, thus obviating and making unnecessary much of the labor and expense of which I have given you an imperfect description, is a subject of such vast importance and such almost limitless extent that I would not venture to bring it into this paper; having already reached the limit of time allowed. Should I ever feel within myself the ability to cope with that momentous question, I will come out with an essay on it at some future meeting. "Water: Its Uses, Benefits, Indispensableness and Purity" constitutes an inexhaustible topic for the medical writer, the sanitarian, the statesman; yea, for every father of a family, and for every housekeeper. An abundant supply of clear, pure, sparkling water will contribute more to the health, comfort and hap-

piness of the human race than any other single article that could be mentioned. Every health board—National, State, city or town—every public official, whose position gives him authority in questions of that kind; every man of influence, who can prevail with those in authority, should strive with all his might to bring about a condition of things that would make good, pure water accessible to every one. The benefits to be derived from that state of things can scarcely be calculated. Water—the best and cheapest of all medicines, the promoter of comfort and happiness—should be supplied to every human being in abundance, in the best possible condition of purity, for the lowest available price that is compatible with the cost of procuring and furnishing it. The city authorities should not be penurious in providing this great promoter of health and happiness to all who live within their jurisdiction. For in spending money for this laudable purpose, they would be casting their bread upon the waters, which would return to them after many days, since the increased health and happiness of the inhabitants would add largely to the wealth of the city, and all would contribute to the general prosperity.

THE IMPORTANCE OF BACTERIOLOGY IN THE PROGRESS OF PREVENTIVE MEDICINE.

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BY FRANKLIN STAPLES, M.D.

WINONA, MINN.

An English scientist has designated the present time as the "bacteriologic era." It has also been properly called "the period of preventive medicine." The reason and propriety of these appellations as together applied to the times, appear in the fact, that the more important advances made in medicine and surgery in late years have been dependent upon, or more or less connected with, discoveries and practical work in bacteriology. The names of scientists who have been and are now engaged in this work of advancement in different countries require no mention. It has been claimed that different characteristics in scientific and practical work have national or provincial origins and belongings; that, for instance, it was for German scientists, by patient investigation, to discover and furnish the foundation-material, to be utilized largely by practical workmen of other nations. In this country it is remembered when in medicine and surgery the making of books and scholars was accredited largely to Philadelphia, while New York and other places were given importance in the work of practical application. Whatever may have been true in the distant past, in the present outlook geographical limitations in science seem to be unknown.

STATE MEDICINE AT THE PRESENT TIME.

In the United States, as in other countries at the present time, preventive medicine is supported largely by the State. Aside from a humanitarian view, the value of human life to the State is considered, as well as that of property, and means are provided for the better protection and development of both.

The beginning of State preventive medicine proper antedates by a little time the coming of bacteriology as a science; but the growth of the former in the few years of its existence has been phenomenal. State medicine began in England in 1844, and in the United States properly in 1889. Since then nearly every State in the Union has established health departments, each State having its local boards and officers, acting under laws more or less complete for the maintenance of public sanitation.

Various property interests have conspired to extend the limits of the domain of State medicine. The discovery of the identity of many diseases in man and animals, and the liability of the passage of infection in either direction, have given increased importance to veterinary medicine; and this, with the financial importance of loss from disease of animals, has largely increased the extent and importance of State sanitary control.

What has appeared concerning the existence and character of disease germs, their conditions of life, means of propagation, and behavior as specific disease causes, in other words, the pathology of germ diseases, has come to be the foundation of a large part of modern scientific medicine. Moreover, work in bacteriology in the last decade has not only widened the field of pathology, bringing into the possession of the world of science a new territory of vast extent and great value, but has pointed to possibilities in the future of preventive medicine, the extent of which may now be imagined but not fully estimated.

Concerning living organisms as causative agents in what are now known as infectious diseases, it has been aptly said: "It matters not whether the organism is large or small; whether it belongs to the animal or vegetable kingdom; whether it is located in the skin, as in scabies, in the muscles, as in trichinosis, in the lymphatics, as in erysipelas, in the solid viscera, as in amebic abscess of the liver, in the intestine, as in relapsing fever, the introduction and multiplication of the living infectious agent constitute infection." (Sternberg.)

The distinction as understood between infectious and contagious disease relates principally to the nature and method of introduction of the disease germ in different affections, and has its importance in the matter of treatment, the kind of isolation required, and other preventive measures. The passage of contagion in diseases of the first class may be, and ordinarily is, through the air to susceptible individuals coming within its reach; the less volatile germs of diseases of the second general variety are themselves more tenacious of life, find lodgment in clothing, may infect houses, are liable to be taken in the ingesta, and require different treatment and management in exclusion. What has come to light in the study of bacteriology has not only largely increased our knowledge of the means of preventive medicine, but has made this appear a legitimate field for work under the control and with the support of State and municipal government, and has given direction therefor.

Already in several of the States, in many of the larger cities, and in the Canadian Provinces, as well as in countries and cities abroad, bacteriologic laboratories are established and supported by National and State health authorities. In some instances examinations for diagnosis, analyses of water and food products, and other works are done for State and local health departments in college and private laboratories. The importance of this work in the domain of State preventive medicine is now generally understood and appreciated. As exceptional, however, to this, and seemingly below the general average of intelligence

and good judgment in the country, is the fact that a certain class of persons, even in the present year, has tried to secure the passage of a national law for the District of Columbia, forbidding the use of guinea-pigs, rabbits, rats, mice, and a few other animals, in the practical study of the great art of preventive medicine. These mistaken would-be-philanthropists have little knowledge of the saving of human life and the prevention of disease and suffering already accomplished by discoveries in science due to these means of study.

THE PROVINCE OF BACTERIA.

Not all bacteria are necessarily pathogenic when existing within the body, but are controlled in their action by circumstances and conditions. Besides, they may not be wholly without advantage to the natural world. Scientists have shown in various ways the importance of bacteria in their relation to the existence of organic life on the earth. Placing man at the head of the scale of living beings and the unicellular organisms known as bacteria at the foot, Dr. Sternberg gives the general view as follows: "The relations of these microbes to the lord of creation are more important and complex than those which exist between man and any other group of living organisms. "In the absence of bacteria or of some other organisms to perform their function, the continnous existence of man would be impossible; for it is due to their activity in decomposition of animal and vegetable substances that organic material, stored up as a result of the vital activities of higher plants and animals, is returned to the soil and atmosphere after the death of these. Without such a provision of nature, organic life would long since have come to a standstill from the storing up of those essential elements which go to make up the structure of animal and vegetable tissues. But as a result of the decomposition of such tissues after death, through the agency of bacteria, these elements are released from the complex combinations in which they exist, and again become available for the nutrition of living plants and animals.[1]

Various kinds of bacteria have an important part in the etiology of disease. Certain disease germs are necessarily pathogenic in themselves, and others may become so when lodged in a soil the condition of which is suitable for their development.

CONCERNING IMMUNITY.

Among the problems made prominent, and concerning which much has appeared in aid of their solution, is that concerning susceptibility on the one hand, and power of resistance on the other, to the encroachment of disease in the various organs of the body. In this, marked difference in different animals and man have been found; and the practical advantages of knowledge gained by experiments in this direction appear in the more accurate and complete knowledge afforded in the choice and application of protective means.

Immunity to disease infection may be natural to a body under certain conditions, or it may be induced by artificial means. The first is shown in cases in which disease germs are known to remain harmless in the body, while vigorous and healthy action is maintained in the tissues, but when this is reduced they at once begin their work of destruction. The micrococcus of croupous pneumonia has been found in the salivary secretions in quite a percentage of healthy individuals examined. During the prevalence of diphtheria in a household, diphtheria bacilli have been found in the mouths of individuals who presented no evidence of diphtheria infection. Here the germs were in no way taken into the tissues, and were without even local effect. Diphtheria is especially a disease of childhood, for the reason that the tissues of the child's body are more susceptible to its infection than are adults. When the disease is fatal to the younger members of the family, the older members often escape with a slight throat infection which shows the specific germ, but which works its own cure by the production of its own antitoxin in the infected parts, and fails to result in a general disease. It is found, however, that fatal infection may be given from these otherwise unimportant cases, hence the necessity of careful isolation in these cases as well as in others, as a means of preventing extension of the disease. This is further illustrated in a case reported by Rosenbach[2] and mentioned by Senn, in which an apparently healthy mother gave birth to a child suffering, when born, from acute osteomyelitis. The infection here must have been transmitted to the fetus from the blood of the mother, whose body was itself immune to the action of germs of this disease.

Pathogenic bacteria affect the animal organisms in two principal ways: First, by depriving the cells of different animal tissues of oxygen and nitrogen and appropriating the same to themselves in their multiplication and growth; and second, by infecting the solids and fluids of the body by certain toxic substances which they secrete. Aside from the toxic substances secreted by bacteria, which are in a geater or less degree injurious to the tissues and may cause death, there are other substances resulting from the action of bacteria, which affect the tissues of the animal so as to prevent further infection of the same disease germ. In this fact appears the explanation of immunity, as it results from an attack of infectious disease thus acquired. The length of time that it holds in the body varies greatly in different diseases and in different animals, races, climates and conditions. It must be said, however, that the exact nature of the change or changes which take place in the body resulting from the introduction of disease virus, the action of which causes immunity to a future attack of the specific disease, has been a matter of question. Some have considered it to be the neutralization of certain substances existing in the tissues or fluids of the body, which are necessary to the development of the specific bacteria; others, that the action of the disease germ in an attack is productive of certain substances which, remaining in the system, prevent the further action of the particular germ. Other theories have obtained, but what is now known seems to be only, that by an attack of the disease, the tissues are in some way rendered wholly or in a great measure unsuitable soil for the future development of the specific germ. As expressed by Prof. F. F. Wesbrook, bacteriologist to the Minnesota State Board of Health: "We must admit that no one factor observed in the production or acquirement of immunity explains all the phenomena of the process. The blood or tissues of an immune animal will kill off either in test-tubes or *in vivo* only a certain number of microbes (to which the animal is immunized), after which the others (if above a certain number be introduced) will grow, since it is neither exhaustion of the food material nor increase alone of the metabolic products of the bac-

[1] Immunity and Serum Therapy, p. 12.

[2] Surgical Bacteriology, p. 21.

teria themselves, but an anti- (bacterial or toxic) substance which is capable of being overcome by a large dose of microbes."

Among the more important diseases affecting either man or the lower animals, or both, in which different forms of bacteria are found to exist either as specific causes or as necessary concomitants of disease actions, are acute pneumonia, tuberculosis, glanders, leprosy, anthrax, actinomycosis, variola, typhoid fever, yellow fever, cholera, diphtheria, tetanus, such affections as have been called plague, venereal diseases and other diseases generally of minor importance, including the contagious diseases of childhood. There is now a history of discoveries made and facts demonstrated concerning the character and modes of action of the different specific bacteria in disease. These discoveries for the most part have been the result of continued labor on the part of scientists, and have not come from fortunate accident. The practical advantages which have resulted or may result from these advances vary in extent and importance in different cases, but all afford evidence of the coming of a more complete knowledge in pathology, looking to more complete means of cure and prevention.

Concerning the present practical advantage of a knowledge of bacteriologic pathology, Dr. Sternberg remarks, in the preface of his late work[3]: "At the present moment we are in possession of experimental facts and data which open to us a vista of possibilities in specific treatment unsuspected a year or two ago." He then speaks of the pathogenic action of specific bacteria in the etiology of disease, and of the methods of experimental work employed in researches leading to the discoveries. In this study appears the explanation of what is meant by natural and acquired immunity, and of the latter, the ways and means of its production.

In the latter part of the eighteenth century, Jenner, seemingly by accident, discovered the means of immunizing the body to the infection of variola by the introduction of the germ of the milder disease, vaccina. This discovery marked the beginning of an epoch in the history of medicine. It remained, however, for men of science in the latter part of the nineteenth century to discover the physiologic character of artificially induced immunity, and this, not by accident nor by outward observations alone, but by continued experimental study in biology, done in the light of modern anatomy, physiology and chemistry.

A brief mention of the history of a few late discoveries and the procedures in securing immunity to the infection of two or three of the diseases mentioned, will serve to illustrate the character of work in this important department of preventive medicine.

MEANS AND METHODS.

There are three principal directions in which the means of preventive medicine have been employed especially against the advance of communicable diseases: 1. In reducing the source of infection propagation to the minimum by means of sanitation, shown in the sanitary care of houses and house surroundings, the purity of the air of dwellings, schoolrooms and places of public gathering, by correct ventilation; the improvements in sewerage and house plumbing, under authoritative inspection and direction; the examination of food products and water-supply, and concerning the condition of public conveyances, the method of disposing of the dead, etc. 2. In preventing the passing of contagion, by authoritative isolation of the infected. 3. By securing immunity to disease in the individual, when necessary, by artificial means. In each of these departments of work a practical knowledge of bacteriology, of the character, behavior and the possible management and destruction of disease germs, has come to have an important place.

1. In the first department of sanitary work here noticed, the knowledge of what constitutes a means of propagation—the germs of various diseases—such as filth on persons and in and around dwellings, decaying animal and vegetable matter, and the want of pure air and sunlight in basements, as aids in the production and growth of the bacillus of diphtheria and other infectious diseases, has laid the foundation and led to the enactment of laws authorizing and compelling sanitary inspection, with provisions for correcting and improving unsanitary conditions by State and municipal authority. Besides this, it is seen that the authoritative cleansing of private houses, public places, persons, animals and things has an important result for good in the educational influence which necessarily attends the same.

2. The importance of effort in the above mentioned second department of sanitary protection from disease, is seen in what now exists in international, State and municipal quarantine, with the amount of governmental expenditures for this purpose. The financial view is that the loss of life and property incidental to the existence of pestilential disease is greater to the State than the cost of defense.

3. What is now known and practiced by way of rendering the body incapable of contracting infectious disease merits a somewhat extended notice. Only a brief mention may be attempted here.

Animals may be rendered immune to specific infection by the injection of the attenuated virus of the particular disease germ. The discovery of this is given to Pasteur, who in 1880 experimented with fowls in the disease known as "chicken cholera." Having learned that this disease is due to a specific germ which could be cultivated in artificial media, the further discovery was made, that the virulence of the germ became diminished in the process of culture. It was accidentally noticed that certain fowls injected with old cultures did not die, and later were immune to fresh cultures which killed other chickens. The attenuation in the old cultures is supposed to be due to exposure to oxygen. The germs having been thus reduced in their pathogenic power, when injected into healthy fowls were found to produce a comparatively mild attack of the disease, which resulted in immunity to further infection.

Pneumonia.—Another illustration of the method of securing immunity is seen in the treatment of pneumonia in man. A bit of history may have place here. The pathogenic germ of this acute disease of the lungs was discovered by Surgeon-General George M. Sternberg in 1880. He is said to have first detected it in his own saliva. Not then being aware of its connection with pneumonia, he named it "micrococcus Pasteuri." Pasteur discovered the same thing independently in the saliva of a child suffering from rabies in December, 1880. It was described by Sternberg in a paper to the Pathological Society of Philadelphia, in April, 1885, and was published on July 1 of that year in the *American Journal of Medical Science.* Here is a case, the like of which has not been uncom-

[3] Written in 1892.

mon, where a question arises as to the priority of discovery because of the nearness of the dates of the first public announcement. The German scientist, Fraenkel, published his discovery of the same micrococcus only thirteen days after the published announcement of Sternberg; and the germ has been called "Fraenkel's diplococcus of pneumonia;" this for the reason that he appeared to have first shown the relation of the microbe to this acute disease of the lungs. Dr. Sternberg gives credit not only to Fraenkel, but to Weichselbaum, Netter, Gameleia and other experimenters, for discoveries and improvements in bringing the knowledge obtained into practical use.[4]

It has been determined by experiment on susceptible animals, that immunity for pneumonia may be had by inoculation with an attenuated culture of the disease germ; and that the completeness and duration of immunity thus produced bear relation to the degree of immunity caused by a natural attack of the disease.

For details in the work of preparation of cultures and their use in treatment, reference is made to the practical works of bacteriologists now available.

Anthrax.—Another disease that may be noticed in this connection is anthrax. This disease occurs epidemically among herbivorous animals—sheep, oxen and others—and may be communicated to man. A historic summary is given in the practical work of Muir and Ritchie,[5] in which is shown the discoveries made in the bacteriology of the disease, which have led to a knowledge of its pathology and rational management. First, in 1840, Pollender discovered rod-shaped bodies in the blood of anthrax animals; in 1863 Davaine named these bodies the bacillus anthracis. Koch, in 1876, made his first contribution to bacteriology. in which he confirmed the view that the bodies were bacteria, and made discoveries concerning the formation of spores on these bacilli, their multiplication by division both in animal tissues and in cultures outside the body, and, by inoculating animals with them, produced the disease artificially. Pasteur disagreed with Koch in some minor points, but in the main confirmed his observations. The existence of spores on this bacillus, and the fact that these may be cast off and distributed outside the body, and that the vitality of these germs may remain for considerable time in spite of desiccation and great changes in temperature, appear as an explanation of the natural spread of the disease. The author here quoted sums up concerning the advantage of the study of this particular disease germ as follows: "Not only is bacillus anthracis easy of growth and recognition, but in its growth illustrates many of the general morphologic characters of the whole group of bacilli, and is therefore of the greatest use to the student. Further, its behavior when inoculated in animals illustrates many of the points raised in connection with such difficult questions as the general pathogenic effects of bacteria, immunity, etc. Hence an enormous amount of work has been done in investigating it in all its aspects.

Glanders.—This well-known infectious disease, which principally affects the horse, is sometimes found in other animals, and may be communicated to man. It is generally believed that in glanders no means of communicating the infection exists, other than that of direct contact with the affected parts of the diseased animal, or with some substance on which the infection has been lodged. The following illustrative case has been published: A young lady while traveling fondled and kissed a small dog belonging to a traveling companion. The dog had been noticed to sneeze frequently. After arriving at her destination the young lady was first affected with a redness of the tip of the nose, which did not yield to any remedy; then the nose became inflamed and painful, and began to secrete mucus, and a diagnosis of influenza was made. But the case grew worse, ulceration occurred and increased, and the microscope revealed a case of glanders. In this case the disease germ may have passed from a horse to the dog and then to the human being. The practical lesson concerning prevention is obvious.

In Diagnosis.—Not the least important use of various cultures of disease germs is that in diagnosis. The use of mallein, tuberculin and cultures of the typhoid bacillus in diagnosing the affections of which these substances are the attenuated germs, may serve to illustrate. Mallein is a fluid obtained from cultures of the glanders bacillus. This was first discovered by Schultz and Lœffler in 1882. Schultz, as late as 1894, first taught concerning the difference in reaction in horses which were or were not infected when inoculated with mallein. It was found that after the inoculation in glandered animals there occurs a decided rise in temperature, and around the point of inoculation is seen a circumscribed swelling. In animals free from glanders, less febrile reaction occurs upon inoculation.

The similar use of tuberculin in the diagnosis of tuberculosis both in animals and man has recently received attention. Analogous to this is the serum (Widal) test for typhoid fever. What has come to light as a result of study in this disease is mentioned by Pepper and Stengle[6] as the most important contribution to the progress of internal medicine during the year. Concerning its value, it is remarked by these authors, that in the year investigators in every part of the world have tested its value, and with remarkable consonance declare it a diagnostic method of the very greatest importance. Dissenting voices have been heard, but these for the most part represent no considerable authority or following.

The diseases and methods of investigation and treatment here mentioned are given only as illustrations of the few for the many. What shall be the changes and developments in means, methods and results, remains to be determined in the future. Great progress has been made, but not without labor and self-sacrifice. Besides, it is true that no advancement in medicine and science has ever been made without opposition. Objectors and critics, both within and without the medical profession, have never been lacking. Intelligent criticism is advantageous and helpful in the discovery of truth; but objection which comes from ignorance, and for this reason is more assertive, may be troublesome for a time, but in the end is harmless. The intelligent student of science has no time to spare with such would-be-instructionists. His work concerns great and important means of progress, the present outlook concerning which gives promise of most valuable results.

[4] Sternberg: Immunity and Serum Therapy, p. 216.
[5] Manual of Bacteriology, p. 275.
[6] Year Book of Med. and Surg., 1898.

Let us have a Department of Public Health!

THALASSIC SUBMERSION A MEANS FOR DISPOSAL OF OUR DEAD.

Presented to the Section on State Medicine, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June, 7-10, 1898.

BY D. LICHTY, M.D.

ROCKFORD, ILL.

The question most intimately following a *useful* existence here is a *harmless* absence after we are through. It is evident that some suggestion for the disposal of our dead, other than earth-burial or cremation, is needed, from the unsanitary character of the former and the natural repulsiveness of the latter.

To show that ocean burial is practical, sanitary, and will meet most of the requirements of sentiment and religion, and *all* those of sanitation, will be the endeavor of this argument. That the beautiful fealty of genealogy and consanguinity and the sacred associations of religion are factors to be considered in this as well as any other method for the disposal of the dead is recognized; but above and beyond these is the unpurchaseable boon of health and its attendant uses and beauty.

Every expedient that human thought could devise has been resorted to in all times past to conceal the human dead and escape their disagreeable, decaying presence and evade their naturally dreaded and noxious effluvia. The nomad's village was removed to fresher and more remote territory; the ancestral cave was promptly deserted and relinquished to the grim destroyer; the rare and desiccating air of the plains did well preserve the body until disintegrated and distributed to the sands and dust; birds and beasts of prey were invited to devour the softer tissues while the bones bleached in the sun and the mists. Chemistry has been invoked to offer an element that would preserve our form or else dissolve it quickly away; and modern electricity has been asked to envelop the loved ones in impermeable garbs of metal to preserve their cherished form and substance. Aquation or sea-burial, except in accidental death *at sea*, was only practical when navigation was so primitive that the hardiest mariner dared not go beyond the shallows or out of sight of his native land, and when bathymetry and geodesy of the ocean were unknown. The embalmers, from the Egyptians to the present, exhausted every resource of their art, then and now, to prevent the decay of the body; but Rameses' and Cleopatra's crumbling and repulsive features, held together with spiced pitch and rags, as seen in modern metropolitan museums, attest its grewsome failure.

All these have failed to satisfy the longings of devotion to our dead, or meet the present rigid sanitary requirements of our rapidly multiplying and dying population, and we seem to have still nothing left but to "inhume the natives in their native plains."

Earth-burial remains an unsatisfactory and unsanitary presence as well as relic. Incineration continues repulsive to all the finer feelings of nature, and we seek relief from all these in the truly *sanitary*, beautifully sentimental, and forever efficient disposal of our dead in the depth and vastness of the abyssal area of old ocean—illimitable and itself symbolic of the infinite in time and space—bride of the sun and vassal of the moon! "Nothing in Nature renders back to man the full and instant sympathy which is accorded by the mighty seas," who thus respose mildly in the generous grandeur of their glorious power.

Sentiment must have a place in this presentation, and in this every department of this subject can have a diversion and division as remote as *mythology*, as exact as *history* and *science*, and as generous as poetry aided by the imagination can plan, from Charon with the obolus, to pay passage, to Tennyson's "Crossing the Bar;" from "Jordan's Stormy Banks" to "Canaan's Happy Shores."

As we emerge from the eras of superstition and shallow thought, and realize that the organic individual is but a transient here, and that disintegration and resolution of the body into its primitive elements is but an arc in the circle of perpetuation; that care for the living, hope for the future and memory for the dead is our aim and object, so does it become forcibly apparent through every channel of study that the now well-acknowledged bane of earth-burial must somewhere, somehow, cease. The catacombs everywhere, instead of being monuments of skilled subearth engineering, are rather persistent evidences of a civilization so remote and crude that, without implements of excavation, they could only follow the sand strata and rock seams in their meanderings toward "points of least resistance" for repositories for their dead. An afterthought, with the then generally entertained idea of immortality of the material body, led to the attempts at decoration and barbarous body-ornamentation which the dry sand chambers and corridors favored by desiccating the bodies, absorbing the gases and preserving the then sacred and esthetic attempts at color ornamentation for the amusement of modern sightseers.

The deception that proximity to graveyards is harmless can not longer be maintained by corporations who own them, or municipalities that are supposed to control them. The study of bacteriology and the toxins, their secretions and their persistent life in all conditions; the penetrability of their gases to remote distances through pervious qualities and strata of soil; their escape and ascent into the atmosphere, all impress the danger of such acres (though sacredly and sentimentally named) on chosen picturesque hillsides, near ravines draining the water-courses, or inclining to wells from which the inhabitants of villages and cities derive their water-supplies and inhale the poison-charged air.

Every aggregation of population is confronted with this menace. London has its finest cemetery—Kensal Green—of 18 acres, containing 70,000 recent bodies, an equivalent of 3-1/5 bodies to the space allotted an ordinary grave. Paris has its Pere la Chaise, equally crowded; in 1871 the communists made their last stand amid its tombs and 900 fell in its defense and were buried where they fell, in two long trenches, their bodies mingled with quick-lime to hasten their dissolution. Other cities are struggling with this problem, owing to limit and contiguity of territory; building tombs above the earth; leasing the ground for brief periods only, and employing the chemistry of absorbents and deodorants and destructive acids to hasten disintegration, tossing the resultant dust to the garbage pile and fertilizing field.

A perusal of the daily lay papers furnishes a surfeit of ghastly recitals of graveyard desecration, of resurrection and demolition, of skeletons ruthlessly thrown about by workmen's pick and shovel within, or adjoining, hamlet or city, to make way for cable or conduit of commerce, or deep foundation for towering tenement. The category of horrors associated with our

crude plan of earth inhumation and attempted body concealment, despite all precautions, is neither in harmony with wholesome sentiment, economy nor *in any* sense approximate modern sanitary requirements. Every other phase of economics has advanced along progressive lines; ancient and modern plagues have been stopped; pain has been robbed of its terrors; time and distance have been annihilated; but a suitable and sanitary repository for our dead has not yet been secured. The "abyssal province" of the ocean, embracing 140,000,000 square miles, more than three times that of the earth's surface, and one hundred times that of the available area of earth, unfolds her limitless and aseptic bosom to envelop us; no actual bounds of length, breadth, height, or depth circumscribe her receptive capacity; the diversion of her shore lines are insignificant when compared with her area, and her perturbations are only on the surface; her deeper strata are scarcely moved in ages.

> The wave
> Unbroken in its tranquil aspect sleeps
> Serene as Beauty in her sunless grave;
> Nor moves a tide, unless its silent flow
> Be through the graves and coral halls below.

Ocean cables lie secure in their beds and swerve not though pulsating with war's weighty messages or love's tender tidings.

The antiseptic chlorin solution of the seas is as stable as air; dissipation and augmentation by affluents are compensatory and preserve a constancy of specific gravity. Its temperature at 400 to 1000 fathoms, in all latitudes in all seasons, day and night, is unvarying and on the verge of freezing. Decomposition, putrescence—the dread of the surviving and the bane of the air and the earth—do not take place in ocean burial.

Imagination naturally revolts at the inexorable chemistry of decay that must take place in vault and subsoil burial; putrescence at the bottom of the sea is unknown; ferruginous matter does not find its way beyond the extreme three-hundred-mile shore line, but here and beyond all is carpeted with pelagic deposits, crumbling remains of the inhabitants of the upper strata, feeding bathybius and the diatom, medusæ and the crinoideæ. Here disintegration will some time, sooner or later, proceed by an alchemy unknown to the present denizens of the earth. Ships go down along the paths of commerce, but deep-sea dredgings find no relic of the myriads that have sunk in her tracks; iron ships soon corrode and wooden ships are easily comminuted; ocean cables enveloped in heavy vulcanite remain long untarnished; gold, glass and heavy porcelain survive; all else soon disintegrates and sleeps forever—a slow accretion to the solid diameter of the globe. Over all is constantly descending through the waters like a snow-cloud, showers of microscopic shells, product of the higher strata. At these depths there are no real or chimerical "sea monsters;" animal life diminishes in the sea as the depths become extreme. The investigations of Professor Agassiz in the Pacific Ocean show conclusively that there are but few *living* forms below a depth of 1800 or 2000 feet; only minute and peculiarly formed and encrusted animal life can survive at this pressure.

Thus a body deposited on its "watery plains" or in its ferny cliffs, and marked on chart by degrees and minutes of latitude and longitude would be as definitely located, as if sepulchered in mausoleums of granite on mountain side or village vale amid earth's shifting scenes.

Compare the area of the stable and abyssal seas with that of the earth, and its limitless boundaries invite undisturbed repose; subtract from the earth's surface lakes, mountains, marshes, rivers and inaccessible territory, tillable lands for the sustenance of the living, and it leaves but a handful of earth for the myriads that already slumber in its bosom, or the unknown millions that shall live and die hereafter.

That change must come in the matter of the disposal of the dead is certain; that cremation during a third of a century of education and argument is far from acceptance and adoption is patent. Fire is the natural foe and dread of man, incineration can not by any force or play of the imagination surround itself with as pleasing sentiment as ocean burial can. Resolution by *fire* is repulsive to all our nature; no one can come near a natural-gas or fuel-oil furnace, much less look into its glowing, roaring caverns without being terrorized in its presence, and no persuasion could urge one to remain while the body of their friend dissolved and disappeared in its fury, or even while preparation was going on therefor. Besides this, it is too expensive for general adoption, and its hygiene and utility are still doubtful. The expense of a *single* Sieman's retort in working order, without necessary buildings, is approximately $2000. Sir Henry Thompson's process is more expensive, and Polle's but little less, in the experiments thus far made use of. By Polle's method two hours were required to reduce a body. Sieman's process required fifty-five minutes after the retorts had been brought to their required degree of heat. At the cremation of the body of the late Frances Willard the body was left in the retort *all night* that the "ashes" might cool. This, in part, realizes the expense and impracticability of cremation when it should be applied beyond the experimental stage, and for those few only who, through persistent indoctrination, signified their willingness before death to submit to this form of dissolution. Witnesses to a cremation do not usually become advocates of the process. I asked a mother, three months after she had complied with her son's request to be cremated, and she had carried his body across three States to fulfil the promise, what she thought of it? She quickly dropped her head and an expression of horror was on her face when she looked up to ask me not to refer to it. The complaint of crematory managers is that parties do not even return for the "ashes," and their vaults are overcrowded.

Admitting that the expense of transportation to a suitable wharf and a distant crematory are equal, the further consummation by ocean burial would be far less expensive and less repulsive than cremation. The bidding adieu at the "Gates ajar" on a cleanly wharf, as a clean boat sailed away over the waters, would be far less trying and have a pleasanter memory than such a leave-taking at the sooty door of a crematory, or to hear the final rumble of the clods on the coffin-lid six feet in the cold ground below. Further, the presence of a large crematory plant of say ten or twenty retorts would soon prove a nuisance in a neighborhood, and its location be as difficult to secure as that of a powder factory.

Consider an aggregation of population like New York and vicinity, numbering nearly five millions, and its death-rate of 15 per 1000 or 75,000 deaths per annum—over two thousand per day to be consumed; who could say that retorts, flues and stacks would not

soon be clogged? Imperfect combustion would result and noxious vapors therefrom fill the surrounding atmosphere. What a battery of furnaces and retorts this would require. No pleasing memories could cluster around such a place. No wonder that even material Germany shrinks from adopting the experiment, and of its dense population gave only a little over two hundred bodies to the experiment last year.

This subject has been presented to marines, travelers, landsmen; to Christian and infidel; and while with all, naturally, death is dreaded and the first suggestion of disappearance by submersion or by any means from the ken of men, is startling and dreaded; at a renewal of the subject after a time for thoughtful reflection they would invariably, as between earth-burial, cremation or ocean submersion favor a thalassic grave. As to *incineration* and urn and mantel preservation, fifty years after its revival from babarous methods, aided by all the modern methods of propagating and advancing an innovation, its *non-acceptance attests its failure.* The proverbial dread of fire does not apply to water; submersion and disappearance beneath the wave can not have associated with it the horror of disappearance by fire. Watery submersion as *immersion* is both a pleasant and a sacred symbol of burial and a new birth or *resurrection* to a large body of Christian believers to whom ocean burial should be a sure surcease from dreaded earth-burial or incineration. A large percentage of suicides choose drowning rather than any other form of extinguishment, and prove their preference for a watery grave to plunging into a fiery retort at rolling-mills or Bessemer converters.

There can be no very loving sentiment that may cluster around a bowlful of incinerated, gluey bones called "ashes" and summoning to memory a beloved face and form of which they were wont to form a part. Thoughts of the positive putrefaction of the loved ones, or how "the small cold worm fretteth the unshrouded form," can not be realized; or how beneath the coffin lid and its "six feet two" of weight of cold clods, rest can not be more sweet, and the form more secure than to be buried in the deep,

> Where the sea flower spreads it leaves of blue,
> That never are wet with falling dew.

Religion and sentiment combine to explain why there is no more ready and favorable movement in favor of *burning* the dead.

Immortality that is to be had only by preserving a handful of bones or mourning over a mound of clay in God's Acre is indeed nothing much to be coveted. "We must be found in the register of God, not in the record of man." The memory of the child or parent can not be less profound for the ancestral body that sleeps somewhere in fatherland, across the broader waters, the site of which they can never hope again to visit. Are the 150,000 brave sons, brothers and husbands of our late Civil War, who sleep in *unknown graves* less cherished than those who sleep in "God's Acre" beneath the graven cenotaph? The white-capped emerald ripples in our national cemeteries marking the "unknown" indicate just as specifically *where* sleeps a hero and loved one as if they were buried beneath the green of Saragossa or the billows of the Atlantic.

We would not be retrograding either in sentiment or sanitation if our seaboard population were not so dense, if we could revive the solitary, stately customs of the Viking chief, whose glory in defeat by death and in departure was to float outward to sea with the tide, reclining, surrounded by his trophies, in his crude but gorgeous craft until he was lost in the majesty of the sea, and sank to rest. The Columbia River Indians buried their dead by setting them adrift in their canoes with a lighted taper in the bow and watched the light and form go out on the broad sea and down together. Thus we are not advocating a custom that is without the sanction of precedent, or one that would conflict with the finer sensibilities of the surviving friends of those who at first *voluntarily* selected this method of burial, as has been done in cremation in the past.

It would seem that when ocean-burial is rightly studied, when the abyssal area is considered, the aseptic fluid that will envelop the form, the quiet that rests in ocean's depths,

> When winds were raging over the upper ocean,
> And billows wild contend with angry roar,
> 'Tis said far down beneath the wild commotion
> That peaceful stillness reigneth evermore.
>
> Far, far beneath, the tempest dieth,
> And silver waves glide ever peacefully,
> And no rude storm, how fierce soe'er it flieth,
> Disturbs the Sabbath of that deeper sea.

Comparing the accessibility for all the seaboard area and the economy with other methods of final disposal of the dead, municipalities or may be corporations, would agree to add to the "white-winged fleets of commerce," and the "white squadron of war," the pearly palaces of peace, that would at stated intervals, near enough together to meet the requirements of the district's mortality, sail away with their sacred cargo to deposit it on the watery plains of the abyssal seas, when with Byron we would say:

> Ours are the tears though few sincerely shed
> When Ocean shrouds and sepulchers our dead.

Such steamers should be especially fitted for their work; they should have complete refrigerating apparatus and chambers fitted to receive all the bodies to be carried; these chambers could also be hermetically sealed as "bulkheads," or salt-water compartments, for the conveyance of contagious disease cases; they should be under the supervision and espionage of the municipal or State board of health. The wharves should be selected for their accessibility; should be capacious and scrupulously clean; fitting enclosure should secure the sacredness of the area, and within or adjoining might be a small, neat chapel. To those who still cherished the exclusiveness of the caste of wealth, rank or family—if death recognized such division—an area might be set aside in the abyssal field by the Geodetic Bureau, and they could be transported in their own or friend's private yachts, with such selected company as they chose, to share the sacred rite and private grief at the watery grave, where

> The free waves kissed her with their cold blue lips
> And then put her to sleep;
> She has a sand pillow and a water sheet,
> And never turns her head or knows 'tis morning.

The caskets or containers might be wicker-wrought as has been suggested for earth-burial, though fastened on a heavy iron or stone base; they might have fenestrated or latticed sides; or ornamental open-work to admit water and favor deep submersion: a suitable weight could be enclosed in or near the foot

of the coffin; if desired this might be of any heavy non-corrosive material, with which might be a graven or moulded number or merited motto, corresponding to a record kept in the family or State archives for the information of future antiquarians, should islands some time rise "unushered from the seas"; where no provision had been made, a heavy concrete of water-lime might fill the lower interspaces and insure descent and submersion. If volunteers were not offered, the "Potter's Field" might surely spare its inmates for the early experimental stage and no breach of sentiment could arise to offend the fastidious.

That bodies would rise again from the formation of gases, as they do in fresh water, is not to be anticipated, from the fact that the lowered temperature and aseptic medium of submersion would both prevent and lessen further formation of gases. It is of record that during the earthquake at Lisbon in 1775, sixty thousand people sank into the sea at once and not one of the dead bodies ever floated to the surface; the water there *now* is only six hundred feet deep, whatever it was at the time of the cataclysm.

That funeral obsequies and ostentation are becoming more and more a burden is an economic fact from which many would escape did not the thraldom of conventionalism prevent. Church funerals are becoming less frequent; the gorgeous hearse, the solemn, nodding plumes and the slow and stately tread of somber comparisoned horses is giving way to the hurry trolley that ends at the gates to God's Acre. The money that is expended for the obelisk and the slab had better provide an endowment and a bed in a hospital for the unfortunate sick, crippled, or defective living. The fund that builds a mausoleum for the dead had better build a school or hospital; and the green cemetery-field that is polluted with decay, could in truth be made "God's Acre," when it was given up for park purposes in which could be beautiful *memorial* plats and avenues, fountains, restful grottoes, inscribed settees, chapels with capacious corridors, with limited spaces assigned or purchased, on which might be inscribed in brief the record and memorium of the dead; libraries and art galleries might award or sell similar spaces.

Thus there would be no territorial encroachment in hamlet or city, and the forsaken and haunted cemetery would become a place of recreation, retrospection and education for the living. Old Ocean would never become crowded, earth would be freer, water would be better, air purer. Life and health—the greatest boons of the Giver—would be strengthened and lengthened, and no harm have been done the dead.

SOME EXPERIMENTS ON THE VALUE OF CARBID OF CALCIUM IN THE TREATMENT OF CANCER.

Demonstrated to the Chicago Medical Society, Nov. 2, 1898.

BY EMIL RIES, M.D.

PROFESSOR OF GYNECOLOGY POST-GRADUATE MEDICAL SCHOOL, CHICAGO.

In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, July 2, 1898, an article appeared entitled "A Note on the Treatment of Carcinoma of the Uterus," by J. H. Etheridge, A.M., M.D., Professor, etc. At the start the author states that the idea of curing cancer by means of remedial agents has never found lodgment in his mind, while the improvement in the condition of several cases of uterine cancer under the treatment described in the article seems to him worthy of record. Then follows a review of the opinions of various authors on the pathology of cancer. Next a description is given of the agent used in the treatment of the cases reported—the carbid of calcium—and the product of dissociation of carbid of calcium with water—the acetylene gas—is dwelt upon at some length, and the question of its toxicity discussed. The author then reports that in 1896 he first saw reference made to the carbid of calcium in the treatment of uterine cancer in some medical journal, which reported that some German physician used it in treating cancer of the uterus. and the author disclaims all pretense to originality in its use. He has forgotten the name of the German physician, and I have been unable to find his article or a report of it in any German publication now accessible to me. Now follows a description of the treatment as carried out in the cases reported. It consists in first curetting under anesthesia, then cauterization with the Paquelin cautery, irrigation with very hot water if necessary. After all this, the carbid of calcium is placed into the cavity thus created and the remaining space is packed firmly with iodoform gauze. The use of the carbid is repeated every three days. The results of the cases treated in this way are then reported, whereof more later.

The conclusions arrived at are the following: As to the *modus medendi* of the carbid of calcium the author has no opinion. Bacteriologic experiments were made with the carbid and with the acetylene gas with absolutely negative results. In a few cases an erysipelatous redness of the sound mucous membrane seemed to follow the use of the carbid, which would suggest that it resulted from an escharotic action of the acetylene gas. Now comes the, to me, incomprehensible statement: "Whether the acetylene gas destroys the cancer cell by annihilative action or by chemically changing it remains to be seen." And the article closes with the words: "One thing seems to be certain, and that is that the carbid of calcium at least postpones death and makes carcinoma patients vastly more comfortable while they do live than any treatment known to the writer."

So far this article. With the pathology of the author I am not concerned tonight any farther than to mention merely that as long as carcinoma is not proven to be a bacterial disease experiments on bacteria with carbid or with acetylene gas are, to say the least, premature in this connection. The rest of the article however, aroused my interest and after having given it the attention which the subject and the position of the author so fully deserve, I am forced to the statement that I disagree with him and believe myself able to make you disagree with him in practically every principal item of his article.

To specify I shall try to prove:

1. That the acetylene has no escharotic action.
2. That the *modus medendi* of the carbid of calcium is simple and easily understood.
3. That the author has utterly and absolutely failed to prove that carbid of calcium postpones death.
4. That the carbid does not make cancer patients more comfortable that any other treatment, even if we consider only those known to the writer or those which must be known to him.
5. That the carbid of calcium treatment not only is not superior to other methods of treatment of inope-

able cancer but exposes the patient to some quite unnecessary dangers.

In order to prove these five points we have to look both at the chemic and the clinical sides of the question. To begin with the chemic part, I shall produce here a quantity of acetylene gas by dropping carbid of calcium into a test-tube with water, and I will expose one of my mucous membranes—my conjunctiva—to it. The effect is *nil* and remains *nil*, if I continue the exposure indefinitely. The same experience has been made by the authors who exposed various animals to more or less pure streams of the gas for considerable length of time—several hours—(see Rosemann *Arch. f. exp. Pathol.* 1895). A number of other experiments with the gas injected under the skin or into the circulatory system prove that the absorption of large quantities is an entirely indifferent affair.

To prove that I am dealing here with acetylene gas, I will light it and you see it burn. Even without lighting it, we notice one thing which is important and is entirely omitted from the article mentioned, viz., the production of heat during the dissociation of the carbid. This development of heat I can demonstrate best by dropping small quantities of water on the carbid. You see the water almost instantly turns into steam. In other words you can, by adding water in small quantities to the carbid, produce the temperature of boiling water. The same conditions prevail exactly in the cancerous cavity of the uterus, where the serum gains access to the carbid by slowly oozing out of the wounded organ. If you take the vessel in which you make this experiment in your hand you will feel that it becomes hot, and if you continue you will prefer not to hold it any longer in your hand. If however you throw the carbid into a larger quantity of water, the heat is much less noticeable, and you can place your hand in the water without noticing any escharotic effect from the acetylene gas developing all around your hand.

In order to get some idea how a patient would feel under this treatment, and in order to find out how high the temperature would rise on trying the dissociation of the carbid on the surface of the body, I place some carbid on my hand without water. No effect. The minute quantities of moisture adherent to the surface of the body are not sufficient to produce dissociation. So on September 4, I tried adding a drop of water on my left upper arm, where you still see the scar and the pigmentation. Immediately I noticed a smarting pain which stopped soon after all the water had been used up in the dissociation. When I then removed the remnants of the carbid I expected to find a simple burn, an erythema or a blister. But I found something else. Instead of the expected blister I found a soft grayish slough surrounded by a red area. That was evidently not due to the heat but to something else, and this something is more important, though it is entirely omitted from consideration in the article mentioned.

Let us look for a moment at the chemic formula which represents the changes discussed here. We have:

$$\underset{\text{Carbid of calcium.}}{C_2Ca} + H_2O = \underset{\text{Acetylene.}}{C_2H_2} + CaO$$

Now CaO is an old acquaintance—quicklime—and what effect quicklime has on human tissues is known to the bricklayer as well as to the fake cancer specialist who advertises "cancer cured without knife." The medical profession generally has abandoned the use of this substance, be it in its original condition or in the various disguises in which it was put up, as Vienna paste, etc. Most deservedly so, because quicklime forms a soft slough; because it does not limit its own action by producing a firm impermeable layer, as for instance the strong acids do. Therefore its effect is uncertain as to the depth of the slough produced. The same reason exists why the carbid of calcium can not be used for checking an active hemorrhage. I sacrificed two dogs before I had gained the experience that the heat produced by the dissociation of the carbid with the blood from the cut surface of the lung or of the liver was a less prominent feature than the softness of the slough which allowed the blood to well out again and again. In one case the dog succumbed to the hemorrhage from the lung, and in the other case the hemorrhage from the cut surface of the liver had to be checked by the actual cautery to save the dog from immediate death. Let us keep this in mind when we turn to the clinical side of the question.

To sum up the chemic part of the question: carbid of calcium brought in contact with water is dissociated under the production of considerable heat into the indifferent acetylene and into quicklime, which in its turn immediately becomes slaked lime. This process again is accompanied by a lively development of heat. The therapeutic effect of carbid of calcium brought in contact with any moist surface of the body is nothing but the well-known effect of quicklime—a remedy long abandoned and for good reasons.

But—and now we turn to the clinical side—how about the clinical facts? Do they not prove the treatment superior to any other? By no means gentlemen: The first case reported has been under observation from December, 1896, till May, 1898. The patient first noticed her symptoms six months before she came for treatment, say June, 1896. She has, therefore, been living with her cancer 23 months. Case 2 has had symptoms since February, 1897. The last report of her condition is dated May, 1898. Total 15 months.

Do these two cases prove that carbid of calcium postpones death? I fail to see that such a conclusion would be warranted, for the very simple reason that a great many cases of cancer of the uterus live that long and much longer without any treatment or after other palliative methods of treatment have been followed. I have picked out at random from my small collection of inaugural theses of German universities a pamphlet by Ditges, which reports a number of cases of cancer of the uterus which refused treatment or were treated with the curette or the Paquelin alone, and the time of death of which was ascertained from the official records kept by the authorities. This little book shows numerous cases where death did not occur until three or more years after the first symptoms developed. And this is not the only book which contains such records. A. Martin, for instance (*Pathol. und Ther. d. Frauenkr.*, 1895), records a case which lived five years without radical operation. In fact, every surgeon who has had some experience with cancer of the uterus is most willing to acknowledge that the prognosis as to the duration of the disease is extremely uncertain. The two cases in the article mentioned do not present any extraordinary length of life after the first symptoms, and therefore do not prove that carbid of calcium postponed death.

The article fails to prove that the carbid of calcium

treatment makes cancer patients more comfortable than any other treatment. First, it is a very common experience that after incomplete operations or after simple curettement or use of Paquelin cautery with various powders or ichthyol or chlorid of zinc treatment the patients are very comfortable for months, many so much so that they consider themselves cured. It must be remarkably bad luck on the side of the author of the article mentioned, if he has never seen such results after treatment with the curette and cautery. I refer to this treatment specially, because it certainly is one known to the author of the paper mentioned as is shown by his report of the treatment of those two cases which included the curette and cautery. And this is the second reason why I can not accept his paper as conclusive evidence in favor of the carbid of calcium.

The cases described have not been treated with the carbid exclusively, but in addition to it with methods which, in the hands of other surgeons, have given fully as good results as those described in the article mentioned. If we combine treatments in this way, conclusions from the results can not be relied upon in a scientific discussion. A third point is to be mentioned—the age of the patients. One is 69 years old, the other 53. It is by no means uncommon to find a very slow progress of cancer in women of that age. A fourth point and a very important one is that, according to the author's own report, both cases give very palpable evidence of a progress of the disease. Case 1 reports May, 1898, that she was "having an occasional bloody grumous discharge from the vagina coming with a sort of gush as though the pent up fluid—about a dram in amount—was suddenly released, that it had an odor like old fish, not like cancer, that it had been going on at intervals for a few days, for about a month." It takes only a very limited experience with cancer to understand what is going on here. The cauterized cervix has contracted, the uterine canal has been strictured, carcinoma is spreading, and the discharge from it accumulates above the stricture. No report of a bimanual examination is furnished. The report that the vagina shows no solution of continuity does not prove anything as to the condition higher up. It is a very old experience that cancer of the cervix frequently spreads upward and outward, leaving vagina and external os almost intact. In Case 2, the treatment was begun July 30, 1897. In February, 1898, patient became ill with a chill and pelvic pains. On the eleventh day an abscess suddenly discharged through the small opening in the vault of the vagina. What has happened? Either a pyometra or an extrauterine abscess has formed, as is seen so frequently in the course of carcinomatous disease, and the report that the vagina shows no solution of continuity affords no certainty whatever as to the spreading of the disease, especially as again no bimanual examination is recorded. Are these the superior results which form the pride of the article? In the first case hemorrhage and odor are present; in the second a septic condition somewhere around the uterus. So the carbid of calcium has not prevented either of them.

We have to say a few words concerning the dangers lurking in the carbid. There is first the danger of the slough extending to an undesirable depth, producing perforations which make the patient's condition worse than before. Secondly, it is possible that some of the quicklime gets to points where it is not wanted and produces unnecessary injuries—a danger which is not very great in the hands of a manipulator of any experience. Thirdly, it must be mentioned that acetylene gas mixed with air in a pretty wide range of proportions is highly explosive and that copper or brass instruments, as sounds, etc., must not be used in this treatment, because copper forms an explosive combination with the acetylene gas

To conclude, I wish to state why I read this paper here; why I make these demonstrations. It is a constantly recurring complaint of the gynecologists that the cases of cancer come into their hands when it is too late, when no operation, be it ever so extensive, can save them. It is also a constantly recurring complaint that the cases which are sent for operation have been under internal or topical medication for a number of weeks or months before the medical adviser comes to see that his treatment availeth naught, and that not until then he hurries the patient off to the surgeon—who then gets the blame if the recurrence follows his radical endeavors all to rapidly. Now I fear, and from the questions which have been put to me from the ranks of the general practitioners, I have good reason to fear that a report like the one in the July number of the JOURNAL, which I have tried to refute here, is only too apt to create new confusion, to lead to more tinkering on the cancerous cervix, and to jeopardize numbers of lives which could be saved if they were subjected to the only proper treatment we know of at present—the extensive radical operation. It is not the fault of the author of the article in the July number if the opinion has gained ground that the carbid of calcium promises to effect a radical cure. He disclaims that expressly. Nevertheless, I know that this opinion is spreading among practitioners.

As to the use of quicklime in the shape of the carbid of calcium in cases of inoperable cancer, centuries of surgical experience have given a verdict which does not encourage new experimentation. The carbid of calcium will henceforth assume its place among the worthless and dangerous remedies for carcinoma.

100 State Street.

SOME CAUSES OF WRY-NECK.

Presented to the Section on Neurology and Medical Jurisprudence at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY C. M. HOBBY, M.D.

IOWA CITY, IOWA.

The object of this paper is to report facts, leaving the consideration of their bearing upon the condition commonly known as wry-neck, for the future. The writer does not believe that disturbances of the nervous equilibrium, which in a few isolated cases are relieved by successful treatment of peripheral irritation, are to be considered as the result of that special irritation. As in epilepsy we occasionally have apparent cure, by correction of the refraction, or by some form of treatment of so-called muscular imbalance, as well as by operating for phimosis, and as the same measures have frequently been followed by the cessation of chorea, so in the following instances torticollis has recovered, after the removal of ocular conditions, apparently little more likely to have exerted a causative influence in its production. That there is nothing original in this suggestion, is shown by a remark in Vol. vii, p. 557, of the "International Encyclopedia of Surgery," edited by Ashhurst. "Young, Lovett

and others have shown that there is sometimes a curious relation between ocular defects and torticollis." (Refering to Trans. Amer. Orthopedic Association, 1891, Vol. i, p. 46; Vol. ii, p. 230.) I have not access to these reports.

The first instance in which I was able eventually to predicate ocular influence in the cause, occurred in 1893, in a boy of 15, whose deformity had existed for several years, and in whom the muscular contraction was apparently structural. There was no spasmodic element; the abnormal position was constant, the head drawn well toward the right shoulder. Finding that any forcible correction was attended with diplopia, I was led to the discovery that paresis of the left inferior rectus existed, and a subsequent tenotomy of the superior rectus led to a gradual but eventually complete recovery from torticollis.

The second case, P. N,, male, age 12, was seen in June, 1896, and gave a history of impaired vision, and asthenopic symptoms existing for more than a year preceding. Three weeks before examination, he had severe headaches, followed by nausea and vomiting, coincidentally with diplopia. As he got better the head became twisted and drawn toward the right shoulder. Examination showed 8 degrees of esophoria, each eye, also a low grade of hypermetropic astigmatism with squint apparent at times. In this case correction of the refraction and "ocular gymnastics" brought about recovery in two months.

DISCUSSION.

Dr. D. R. BROWER of Chicago—I would like to ask Dr. Hobby one or two questions about his wry-neck cases in regard to this matter of a possible reflex origin in connection with these several conditions that have been mentioned here. I would like to know something about the neurotic condition of these cases that Dr. Hobby has described, and in which his treatment seems to have been so remarkably successful. It is my impression that in the care of these and of similar cases, the condition of every peripheral end organ should, if possible, be ascertained, and the errors, if any be found, corrected; but I wish to emphasize what Dr. Norbury has said, and what my friend, Dr. Gradle, has also emphasized in his paper: that after all it is the constitutional condition that demands our most careful attention. End-organs that are out of order must be put in order. I care not whether it is a defect in the eye or in the nose, wherever there is a peripheral end-organ out of order, the derangement of which can be corrected, it should be corrected. But I think there are very few cases of wry-neck, of headache, or any other condition of the nervous system similar in kind, that are altogether and entirely due to some such disturbance of the peripheral nervous system as has been so ably described in those two interesting and valuable papers. I desire to emphasize the necessity of finding out the constitutional state; and herein lies the difficulty in the treatment of these cases of headache.

Dr. C. C. HERSMAN of Pittsburg—With reference to Dr. Hobby's paper, the author has had better success in treating wry-necks than I have. Sometimes these wry-necks will continue for months, however greatly improved. Occasionally we may make a mistake in the diagnosis of wry-neck. A patient of mine, a child of three years, I diagnosed as suffering from meningitis. Another physician however, a week later diagnosed the condition as wry-neck. I was not much relieved by the other doctor's opinion. The trouble continued until about the thirteenth day, when the child was very much better, but I still told her mother not to be hopeful. On the fourteenth day the child took suddenly worse, and a very severe meningitis developed, followed by death.

Dr. HOBBY—I especially disclaim the belief that peripheral irritation was the fundamental cause in the great majority of those cases which were relieved by the removal of the peripheral irritation, such as the occasional relief of epilepsy by treatment of ocular conditions and matters of that kind, the operation of phimosis, etc. We used to be taught concerning the immediate cause and the remote cause; and we used to think that sometimes the peripheral irritation, added to the constitutional condition, would produce the given difficulty. It was as exceptional instances that I reported these two cases of wry-neck in which the ocular cause seems to have been extreme. I do not believe that many others of these cases will be relieved in the same manner. I simply wished to bring the attention of the Section to the fact that wry-neck was due to ocular diseases in some cases.

DO WE DRAIN TOO FREQUENTLY IN PELVIC SURGERY?

Presented to the Section on Obstetrics and Diseases of Women at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY W. H. HUMISTON, M.D.

Associate Professor Gynecology in the Medical Department of Western Reserve University; Gynecologist-in-Chief St. Vincent's Charity Hospital; Consulting Gynecologist City Hospital.

CLEVELAND, OHIO.

Since the publication of a few cases in the February, 1898, number of the *Medical Council*, I have had a series of pus cases, some of which were of such a serious nature, and of such a virulent infection, that a most thorough test of non-drainage of these cases has been made, and the results in all have been satisfactory and beyond my expectation.

I am fully alive to the fact that there must be a certain (small) percentage of our cases in which death can not be averted whatever the technique may be, but on the other hand I am assured from the careful study of my own, and the cases of other surgeons, during the past five years, that the mortality in pelvic surgery has been kept too high, *partly* by the indiscriminate use of some form of drainage. Lawson Tait says, "That there is an inevitable mortality in abdominal section I think is certain." He bases this "inevitable mortality" rate between 3.5 and 5.5 per cent. upon a series of 1350 consecutive operations.

For years I had relied upon the glass drain as one of the most necessary adjuncts to my technique in pelvic surgery. In all cases where there have been extensive adhesions separated, and large areas of oozing peritoneal surfaces left, I have been most careful to thoroughly wash the peritoneal cavity free from all débris, and held it especially important to use a glass drainage-tube for twenty-four or forty-eight hours. However, my records show that during the past four years only one case outside of my own private hospital was drained in this manner.

It was not that the cases were of a less serious nature, but they were not drained because I feared a subsequent infection of the peritoneum through unskillful handling and dressing of the tube. In such cases, then, it was a choosing of the lesser evil when I closed the belly without supplying an artificial drain. I have reached this confidence in the closing of the abdomen without drainage through a long series of cases.

A widow, aged 23 years, had one child, and had had one miscarriage. Tubercular tendencies inherited from both father and mother. Contracted gonorrhea one year previous to her admittance in City Hospital. Operation December 21, 1894. Double pyosalpinx with general pelvic adhesions. Uterus held in retroversion by inflammatory products. Pelvic organs and intestines were covered by miliary bodies, closely resembling, in macroscopic appearance, tubercular areas (pathologist failed to report his examination). Considerable oozing. The peritoneal cavity was carefully cleaned and dried and the belly was closed without drainage. This is only one example of a number of early cases in which I felt compelled, on account of unfavorable surroundings and conditions, to close

the peritoneal cavity without the use of a drain, a measure inconsistent with my teaching and usual practice of that time. The uniformly happy result in each successive undrained case in the 1894 series was very unexpected.

My mortality rate has been decreased almost *pari passu* with the declination of the rate of drained cases: In 1894, 71 per cent, drained, 14 per cent. mortality; in 1895, 36 per cent. drained, 7 per cent. mortality; in 1896, 33 per cent. drained, 6 per cent. mortality; in 1897, 4.33 per cent. drained, 4.66 per cent. mortality. And so far in 1898 I have drained no case, and the mortality rate is as low as 3 per cent.; in fact, to be exact, 2.8 per cent.

During the year of 1896 the glass tube was supplemented by gauze in almost every case in which the glass was used. In these cases the dressings would not be disturbed until the expiration of the first twenty-four hours. The tube would then be removed, and the gauze would remain undisturbed for three or more days. This was merely an expedient to avoid frequent dressings and so lessen the danger of infection. During the past year, however, I not only discarded the glass tube, but also any former conception of the values of all drains in the ordinary cases of pelvic surgery, so that the 4.5 per cent. of cases which are counted as drained during 1897, really only represent the cases in which gauze was used—either in the form of the Mikulicz apron, or of simple strips—for the purpose of controlling such oozings which I feared would be too copious for the peritoneum to care for. I feel that this is yet too high a percentage of open wounds, and confidently hope to almost minimize the number during this present year.

In those cases in which I know the peritoneal cavity is contaminated, I thoroughly wash out the pelvis with a saline solution, using it for the purpose of dilution of infection rather than with any idea of antiseptic worth, and close the wound, leaving within the peritoneal cavity as much of a fresh salt solution as it will contain. This radical change of opinion in the management of my cases has been slowly brought about by close observation and study of my clinical cases. I have been reassured, however, in my position by the reports of different bacteriologic researches, such as that from Dr. John Clark of Johns Hopkins Hospital, wherein particularly the dangers of drainage are well defined. This report was published in the *American Journal of Obstetrics*, in April and May, 1897, and should be carefully considered by every abdominal surgeon. I append a few illustrative cases:

GENERAL AND PELVIC PERITONITIS.

Suspension of the uterus was performed upon Mrs. S. in December, 1895, in Philadelphia, and in January, 1896, a second operation was performed for a ventral hernia.

In February, 1897, when she had been seven months pregnant, she began with severe labor pains. The doctor in attendance removed per force, a dead and macerated child. She developed thereafter a very severe form of puerperal fever.

On May 11, 1897, when I first saw her, the exudate extended midway to the umbilicus. No areas of softening could be found. She was very much reduced in general health.

On July 12 she was operated upon at the City Hospital. Throughout the upper two-thirds of the old scar were found very dense omental adhesions; and about the lower angle, the anterior uterine wall, near the fundus, was adherent over a space of nearly three inches square. The uterus was exceedingly large and very dense. The pelvic organs were matted together with inflammatory exudate. The uterus and its appendages were removed and an effort was made to cover as much surface as was possible with the remnants of peritoneum left in the pelvis. The belly was closed, and the patient passed through to a rapid convalescence.

RUPTURED TUBAL PREGNANCY.

On July, 27, 1897, at my hospital, Mrs. H. was operated upon. The right half of the pelvis was completely shut off from the general peritoneal cavity by adhesions between omentum, intestines and belly walls. This formed a pocket which was filled with partially organized blood and lymph, and in the bottom was found a large hematoma of the ovary and the ruptured tube. The left appendage was normal. Adhesions were carefully separated, the vessels were tied, the pelvic cavity was thoroughly cleansed, and the belly was closed. She left the hospital on the twenty-fifth day in good local and general condition.

GONORRHEAL PYOSALPINX.

At Akron City Hospital, on July 31, 1897, I operated upon a case for Dr. Cleaver. Case had had recurring attacks of pelvic peritonitis until she was very much reduced. The pelvic organs were closely matted together by adhesions of both old and recent date. Bleeding and also general oozing was free. Both tubes contained pus, and the ovaries showed evidences of chronic inflammation. After the pelvic cavity was wiped dry and clean by strips of plain gauze, three pints of salt solution were poured into the belly, and the wound was closed. Dr. Cleaver reported that her progress was rapid and favorable.

Mrs. K. conceived in June, 1897, miscarried in October, and was admitted to the City Hospital in the first week in December. A diagnosis of double pyosalpinx was made, and the operation was performed on December 11, 1897. During an examination by several of my students, just immediately preceding the operation, the left tube was ruptured. On opening the belly it was found that the pus had escaped into the pelvic cavity, but had been hindered from contaminating the general peritoneum by a wall of adhesions. The appendages were removed, and the pelvis was cleaned by mopping the cavity out with gauze strips and irrigating with saline solution. Just before closing the belly 2½ quarts of salt solution were poured into the peritoneal cavity. From cover-slips a staphylococcus was found, together with what was thought to be the gonococcus. A culture in bouillon was obtained, but unfortunately no differentiation was made.

In this case the temperature after operation never reached a point above 101⅗, and after the tenth day was noted as normal both at morning and evening. She was dismissed on Jan. 3, 1898 – twenty-three days after operation.

AN OVARIAN CYSTOMA (SUPPURATING).

Mrs. P., a widow, aged 50 years, has borne two children, the youngest of whom is 17 years of age. Her first menstrual period occurred when she was 18 years old. They recurred regularly and lasted usually five days; they were unattended by pain, and the quantity of the flow was small.

Since the birth of her last child, however, she has suffered severely with dysmenorrhea, and her general condition has been much impaired. The labor was long and difficult, and shortly after the puerperium, she noticed a prolapse of the uterus which eventually became complete. Her family history is good, and there is nothing in her general previous history which bears upon the case. On May 20, 1895, she first noticed an enlargement of the belly in the left iliac region. It continued to increase, making unusual gains at irregular intervals, until the latter part of March, 1897, when the tumor steadily and rapidly increased. About this time she began to have repeated attacks of chills followed by fever, great tenderness throughout the entire abdomen, and emaciation with loss of strength. The diagnosis of an abdominal tumor was made a year ago, but the patient refused then to permit an operation to be made. I first saw the case on June 13, 1897, in consultation. We found the patient in great distress because of the interference with the respiration and the heart's action. Her temperature was 103, and pulse 130. She was anemic and greatly emaciated. Edema of the lower extremities extended above the knees. The tumor completely filled the abdominal cavity, pressing the xyphoid outward at a right angle to the sternum and widely flaring the lower ribs. The circumference of the belly at the umbilicus was forty-five inches, from the xyphoid to the symphisis pubis twenty-three inches, and from the free end of the twelfth rib to the middle of Poupart's ligament of the opposite side thirty and one-half inches. A complete prolapse of the uterus was found. Her general condition was very poor. Her temperature when she was admitted to my hospital, June 16, 1897, was 100 degrees, pulse 130 and very weak. Examination of the urine showed a very small daily quantity, with a large amount of albumin, renal cells, and granular casts. The case was not a promising one for radical operative measures. She had reached such a point in her suffering that she was willing to submit to an operation, preferring death to an existence accompanied by such extreme discomfort.

We operated after five days of preparation, in which laxative baths, restricted diet, drinking of hot water, and strychnin were used. On June, 13, through an incision in the linea alba, I tapped the cyst and removed its walls. Sixty-four pounds of fluid were drawn off. There were no adhesions to the anterior wall, nor to the small intestines. The posterior wall of the cyst was intimately adherent to the omentum. To both sides, but particularly the right side, the adhesions to the lateral abdominal walls were both dense and vascular. A great deal of organized lymyh was found between the stomach and the apex of the cyst. All adhesions were broken, and immediately the bleeding points were ligated. It became necessary to remove the entire omentum. A great surface of the lower curvature of the stomach was adherent to the fundus of the cyst, and a mass of inflammatory exudate was removed between the cyst and the lower surface of the liver. The pedicle was three inches in length and about the size of the little finger. The patient's condition was very precarious. The pulsations in the radial arteries had ceased for a time, but quickly responded to the application of a large quantity of hot saline solution into the belly cavity. After thorough washing, four quarts of the normal physiologic salt solution, at a temperature of 114 degrees F., were left in the peritoneal cavity, and the incision was closed *without drainage*. The pulse steadily gained in strength and fulness, and became less rapid as the fluid was absorbed, and contrary to expectations there was no interruption to a very rapid convalescence. Her condition did not even warrant an attempt at suspension of the uterus. In truth, we made haste to get her off the table alive. She was dismissed in four and one half weeks from the day of operation. We found a prolapsed right kidney and an attempt to replace the prolapsed organs was made. Failure to reduce them was evidently caused by adhesive bands.

On September 18 the family physician reported that he found the patient working hard at the family washing. She had gained twenty-five pounds, and was free from all aches and pains, excepting at times a dragging in the region of the prolapsed liver. Microscopic examination of the mass bounded by the liver, stomach, and fundus of the cyst showed simply a mass of organized lymph, although macroscopic appearance was that of malignant degeneration. The weight of the tumor and its contents was seventy-two pounds, and the patient after its removal weighed not more than eighty-five pounds. The tumor was a simple glandular ovarian cyst with suppuration.

DOUBLE TUBO-OVARIAN ABSCESS (GONORRHEAL).

Miss A., aged 18 years, gave the usual history of gonorrhea and its sequelæ. On March 8, 1898, with great difficulty I removed both uterine appendages—they were tubo-ovarian abscesses. The pelvis was roofed in by inflammatory exudate, and the appendages were deeply imbedded. In their removal pus was spilled. Much of it was caught on the gauze strips with which I always protect the general peritoneal cavity, but the structures in the pelvis were thoroughly covered. The pelvis was irrigated with hot saline solution and the belly was closed with two quarts of salt solution remaining.

In the bacteriologic examination of the contents of the tubes and ovaries, a *virile* staphylococcus was found. A severe form of ether pneumonia was first noticed eighteen hours after operation. Complete hepatization of the two lower lobes of the right lung followed. Barring this accident the convalescence was normal. The patient was dismissed in four weeks. Later she reported herself in good general health.

In conclusion I would again affirm the opinion that almost, if not every case of pelvic surgery requires no drainage. That even those cases in which there is a general infection (the cases which make up largely the totality of those designated by Tait as the "inevitables") can not be benefited by drainage.

Let us then recognize more fully both the expediency and the dangerous factors in the use of the drain, and so lower to a minimum the present high rate of mortality, that even the best of our operators yet attain.

122 Euclid Ave.

From the Little Red Schoolhouse.—A school teacher at Port Allegheny, N. Y., the other day received the following note: "My boy tells me that ven I trink beer der overcoat vrom my stummack gets to thick. Bleese be so kind and don't interfere in my family affairs."—*Life.*

THE IMPORTANCE OF THE STERILIZATION OF FOODS AND DRINKS BEFORE THEIR INGESTION.

Presented to the Section on State Medicine, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY AUGUSTUS P. CLARKE, A.M., M.D.

CAMBRIDGE, MASS.

In presenting this subject for consideration it has not been so much my aim to cover all the phases which the question involves as it has been to bring before the Section that portion of the theme on which I have some definite conclusions. All will admit the importance of bacteriology and will not fail to appreciate the wonderful results achieved.

Professor Virchow, in his address on "The Continuity of Life," before the general session of the Twelfth International Medical Congress at Moscow, spoke of the gradual progress that had been made by the use of the microscope, and said that its evolution had given rise to a new impulse in the march of medical science toward the development of biology. He attributed our indebtedness for the marvelous working of that instrument to Ehrenberg of Berlin. Prior to the achievements, the results of the study of Ehrenberg, as published in his "Uber die Infusionsthierchen als vollkommene Organismen," all the ultimate aspects relating to the nature and character of the various histologic elements and bacterial agents were shrouded in the deepest mystery.

One of the most striking illustrations of disregard by the public of proper precautions that should have been taken for protection in the use of milk, which is subject to infection, occurred in Cambridge in the summer of 1896. Though typhoid fever is a disease that has been more or less endemic in the metropolitan district, the cases are usually sporadic, and in their manifestation are for the most part of the milder type. During the months of August, September, and October of 1896, an epidemic of that disease raged with unusual severity. For the month of July of that year the number of cases reported by the various physicians in practice was 19, the number in August was 84, in September 56, in October 43, in November 23, and in December 14. The number of cases reported for the six months immediately preceding was as follows: in June 4, in May 3, in April 0, in March 3, in February 3, and in January 3. The local board of health, aided by an agent of the State board, in endeavoring to ascertain the cause of increase in the number of cases that occurred, succeeded in tracing their appearance for the most part to families supplied with milk by one particular dealer. Careful inspection of the dairies did not reveal any irregularity in the conduct of the business. There was, however, evidence tending to show that a workman who had been indisposed with what seemed to be a mild attack of typhoid fever, had been allowed to wash the cans. The total number of deaths from typhoid fever in Cambridge during the year of 1896, omitting the non-residents, was 30, while the number in 1897 was only 11, a fraction over a third of the number in 1896. The number of cases of typhoid fever reported in 1897 was as follows: in January 5, in February 5, in March 1, in April 1, in May 7, in June 6, in July 5, in August 10, in September 15, in October 24, in November 12, and in December 14—making a total of 105 cases, or 150 cases less than in 1896.

In this connection there were some personal obser-

vations worthy of note. In a number of families no attacks of typhoid fever occurred, though the members of the families were free users of milk. For a long time I have endeavored to impress the importance of sterilization of milk before using it. In some few instances I have succeeded in bringing about a reform.

In one family of six persons the only one who suffered from an attack of typhoid was a lad of 16 years, who insisted upon taking cold and unsterilized milk. He was accustomed to indulge freely in the use of uncooked milk while the rest of the family, receiving the milk from the same source, though not using it until after it had been properly prepared, escaped altogether. In my own family during the year of the typhoid epidemic above referred to (1896), the milk supply was from the source ascribed as the cause of the increased number of cases, though none of the family suffered except the domestic, who preferred cold uncooked milk. She frequently drank a glassful at a place of retail, whose supply, it is said was obtained from the same dealer, as was that supplied to our own household. She suffered from clearly defined symptoms of typhoid. A son and a domestic of a physician not far from my residence were among those who during the epidemic partook of the milk before it was sterilized and were sufferers from typhoid. The milk was from the same milkman.

In 1894 eight cases occurred in rapid succession among persons taking milk from the same milkman. The trouble originated at a farm in Bedford whence some of the milk was brought. Some time previous to these attacks of typhoid, a number of cases occurred in which the trouble was traced to another dealer's milk. Milk is often an almost indispensable article of diet in the treatment of many forms of disease and in the after-treatment or management of surgical cases. For this reason I have frequently relied upon the advantages of a milk diet.

In 1893 the number of cases of typhoid reported in this city was 92, an increase of 12 from the previous year. Males seemed to have furnished the larger number (53). It may be, says the reporter, that in taking meals away from home more frequently than females they have exposed themselves to the danger of introducing into their systems the morbid germs. This statement as touching upon our duties as medical advisers should be regarded as most significant.

There can be now no question intelligently raised as to the infectious nature of typhoid fever. The agency of the baccillus of Eberth is undoubtedly the cause. Water for domestic purposes may become contaminated by the presence of typhoid germs, as was well illustrated in the outbreak which occurred in the Borough of Newport, Isle of Wight, in 1894, when some 436 cases out of a population of 10,512 were observed.

Some writers have regarded Pasteurization as sufficient for protection against micro-organisms. This method of proceeding is effected by subjecting liquids for about half an hour to a temperature of 160 degrees F. before their introduction into the system. Such a limited treatment will not always prove adequate for complete protection against the ingress of bacterial elements.

The temperature should be carried to the boiling point, and maintained there for some minutes lest the spores of many of the pathogenic organisms escape destruction. A convenient process of sterilizing drinking water is found in the use of bromin. Ammonia will serve to neutralize this chemic agent. Schumburg uses 0.2 c.c. in a solution as follows: water, 100; bromin, 20; potassium bromid, 20, for each litre, and then neutralizes it with an equal amount of 9 per cent. ammonia.

Some waters require an increased amount of bromin to overcome the ammonia which it contains. I have tried this and have been pleased with the results, especially when it has been necessary to use water very freely in a case of prolonged illness and when objection is raised on the part of the patient to the use of boiled water. The taste is not disagreeable from the presence of the slight amount of bromin salts.

Mention of this formula is made in THE JOURNAL, vol. xxviii, page 655. Professor Vaughan, in his communication to the Congress of Demography, in London, 1891, stated substantially that milk had often been diluted with water containing germs of typhoid fever, and that the prevalence of the disease had been traced to milkmen's supply. The same author makes mention of 138 epidemics of typhoid fever, 50 tabulated by the late Mr. Ernest Hart of London, 88 collected by himself. All these outbreaks were due to a specific pollution of milk. Mr. Hart had made record of fifteen epidemics of scarlet fever, and Professor Vaughan had found data of 59 others, making a total of 74 epidemics that had occurred through the medium of contaminated milk. Reference again to Dr. Kennedy's paper read before the American Public Health Association, 1896, shows that of 138 epidemics of milk typhoid, 74 of scarlet fever and 28 of diphtheria—a total of 240 epidemics—187 have been noted by English writers and 31 have been described by American observers. The English and the Americans have been much behind the nations of the continent of Europe in the use of the means for protection against contaminated foods and milk. In the hotels and restaurants of Mexico I found that hot or boiled milk, either through custom or for sanitary purposes, was freely used. The freshly prepared tortillas and the hot tomales impregnated with pepper could be partaken of at any time with the least possible danger from infection.

The contraction of tuberculosis from milk supply is another subject that has engaged the attention of state authorities. The reaction to the test of tuberculin in cattle showing suspicious symptoms of the disease has proved most helpful to the government in taking measures against the use of contaminated meat and milk. Cases have been reported in which a cow, apparently in good condition, reacted to the test of tuberculin; and after being slaughtered showed evidence that one or more portions of the lungs were in an advanced state of tubercular degeneration. A cow that is well fed and housed and has had but little exercise may prove to be affected with tuberculosis without presenting any manifest symptoms of such disease.

In my own practice a number of interesting facts have been noted. Some years since, before the public authorities had become aroused to the possible dangers of milk and meat supply, a young man of good family history was taken ill with tuberculosis. He had been very fond of raw or fresh milk. Some few years after his marriage his symptoms became worse, from which he succumbed. The younger of his two children was the next victim. His wife

whose parents and ancestors on both sides were of good health and of long life, was the third to be attacked. In the same house and mingling with the same family, her brother's child was seized with a fatal attack of tubercular meningitis. The next patient was the mother of this last child (living in the same family). The ancestors of this last patient were noted for their unusual vigor and longevity. I should state that the older of the two young children of the father who died was not nursed by the mother, but was fed from the bottle. Until the child grew to a considerable size she continued the use of milk, and seemed to insist, as her grandmother said, upon her food being of a temperature that would almost scald any ordinary child to take. This desire on the part of the child, according to our present understanding was her salvation. Her growth was rapid and her physique became most excellent. The distinguished consultant called in at the time of the occurrence of the various cases, remarked that the contagionists would claim in these cases that they were the result of the communicability of infection, though he at that time, thought it best to wait until more facts were brought out before an expression of opinion should be made. Attacks of scarlet fever and diphtheria should be especially guarded against. Milk is no doubt often the medium for the transmission of the germs.

There are some well-recognized articles of food whose treatment should be most carefully studied. Everyone knows how frequently are seen bread, and other foods or eatables, that have been more or less exposed to dust laden with germs and to various forms of exhalations, sold to customers and consumed by them without the slightest regard being paid to the dangers incident to such contamination. All such articles should be subjected to the purifying action of heat at varying degrees of temperature and at intervals according to the length of their exposure, their susceptibility of becoming the vehicle for transmission of germs and the uncertainty of the sources from which they have been derived. This should be especially observed whenever a zymotic or contagious disease appears among children or occurs in a family of several persons.

The boards governing the public water-supply may be attentive to duty, they may use all reasonable means to guard against its pollution and may resort to the best methods for its filtration still this great commodity when thus treated will at times be far from innocuous, as the records of repeated epidemics have shown. The application of heat at 170 degrees, or at the boiling point for some minutes, until all germs or micro-organisms and their spores have been destroyed, will overcome the dangers from imbibing such waters and will preclude the necessity of having to resort to the use of spirituous liquors as a substitute.

Examination of facts in regard to the manner in which the meat-supply may be secured leads to the conclusion that all such articles of diet should be thoroughly sterilized before they should be ingested. (*Boston Med. and Surg. Jour.*, vol. cxxxviii, p. 282.) It is too much, says a writer, to expect that when only one or a little more of the thoracic lymph-glands of an animal which has been slaughtered for food has been found affected with disease, the entire portion of the meat should be thrown away. Disease, as it has often been shown, may be restricted to areas or foci near the stomach, to a small part of the liver, or to a limited section of a lung; in such cases the inspectors may not condemn the meat as unfit for food. The question will no doubt be soon brought before some of the State governments for determining what should be the proper course to pursue in dealing with such cases. It has been reported that the flesh of at least one-half of the animals which have reacted to tuberculin has been found on postmortem to be affected only to a limited extent.

To enforce rigid inspection of animals and then to prevent the use of all meats as food when in any way affected, without regard to the extent of the disease would result in an unnecessary loss to a State and in an unwarranted waste to its inhabitants. Persons are not infrequently appointed as inspectors who have no practical knowledge of the duties of such a trust. If the races are to continue to be consumers of meat as heretofore the safest course for a family or person to pursue is to see to it that all meats, in whatever form they may be presented or from whatever source they may be delivered, are so sterilized as to destroy all bacilli or other micro-organisms.

THE SURGERY OF CAMP WIKOFF.

BY N. SENN, LIEUT.-COL. U. S. V.

CHIEF OF THE OPERATING STAFF WITH THE ARMY IN THE FIELD.

The great national Camp Wikoff has been made the recipient of the returning army of Cuba. Three months ago the invasion of Cuba was ordered. Our troops left the different camps in excellent condition and good cheer to meet the Spanish army in the neighboring island, fully informed and impressed with the events that awaited them. The army of invasion considered it a privilege to be called to the front to represent the military prowess and power of this country. The outside world had no conception of what our army could accomplish at such short notice in a distant tropical country. The authorities, and particularly the medical department, were fully aware of the fact that the invasion of Cuba meant more a battle with climate and disease than the weakened, sickly, half starved Spanish forces. The invasion was planned on the spur of the moment, and the corps were rushed to the front with a haste that appeared all out of proportion to the conditions of things as they presented themselves at the seat of war. It was decided that our flag should float over the city of Santiago on the Fourth of July regardless of consequences. The army of invasion was packed on transports days before the final order was given to sail. Here was one of the many causes that impaired the health of our troops. The lack of harbor facilities on the coast of Cuba, where our army landed, made disembarkment and the landing of supplies exceedingly difficult. Most of the barges intended for this purpose were wrecked during the voyage, a serious loss which could not be remedied in time. Much suffering was caused by the lack of efficient landing and transportation facilities. Our troops were supplied with rations calculated for our climate, but not adapted for a tropical country. Our soldiers were exposed at once to malarial infection in all of the camps. Occupation of the buildings in which yellow fever had full sway for years, and the free intermingling of the filthy Cuban refugees and soldiers with our troops could not fail in starting and disseminating this disease among our soldiers soon after landing on Cuban soil. Typhoid fever, which prevailed in all of our large camps before the army sailed for Cuba, soon gained a firm foothold at the seat of war and did its share in increasing the mortality and in shattering the efficiency of the service. Amebic dysentery and diarrhea, the two greatest enemies of the Spanish army, thinned out our ranks and crowded our imperfectly

GROUND PLAN
of the
GENERAL FIELD HOSPITAL
AND ANNEX
at
CAMP WIKOFF
MONTAUK POINT.
N.Y.

BY
W.H. FORWOOD
COL and ASSIST. SURG-GEN'L. U.S.A

Scale

Guard House

Post & Express Office

Chapel and Reading Room

Quarters for Stewards

National Independent War Relief

Extra Nurses Quarters

Nurses Quarters

Women to Write letters for the Sick.

Bath House

Latrine

Store Room

Kitchen

Mess Hall

Officers Quarters

Chief Surgeon

Store Houses for Womans National War Relief

Officers Mess

Kitchen

Store Room

General Office

Dispensary & Store Room

Store Room

Store Room

Operating Room & Ward

Ward

Covered Way

Ward

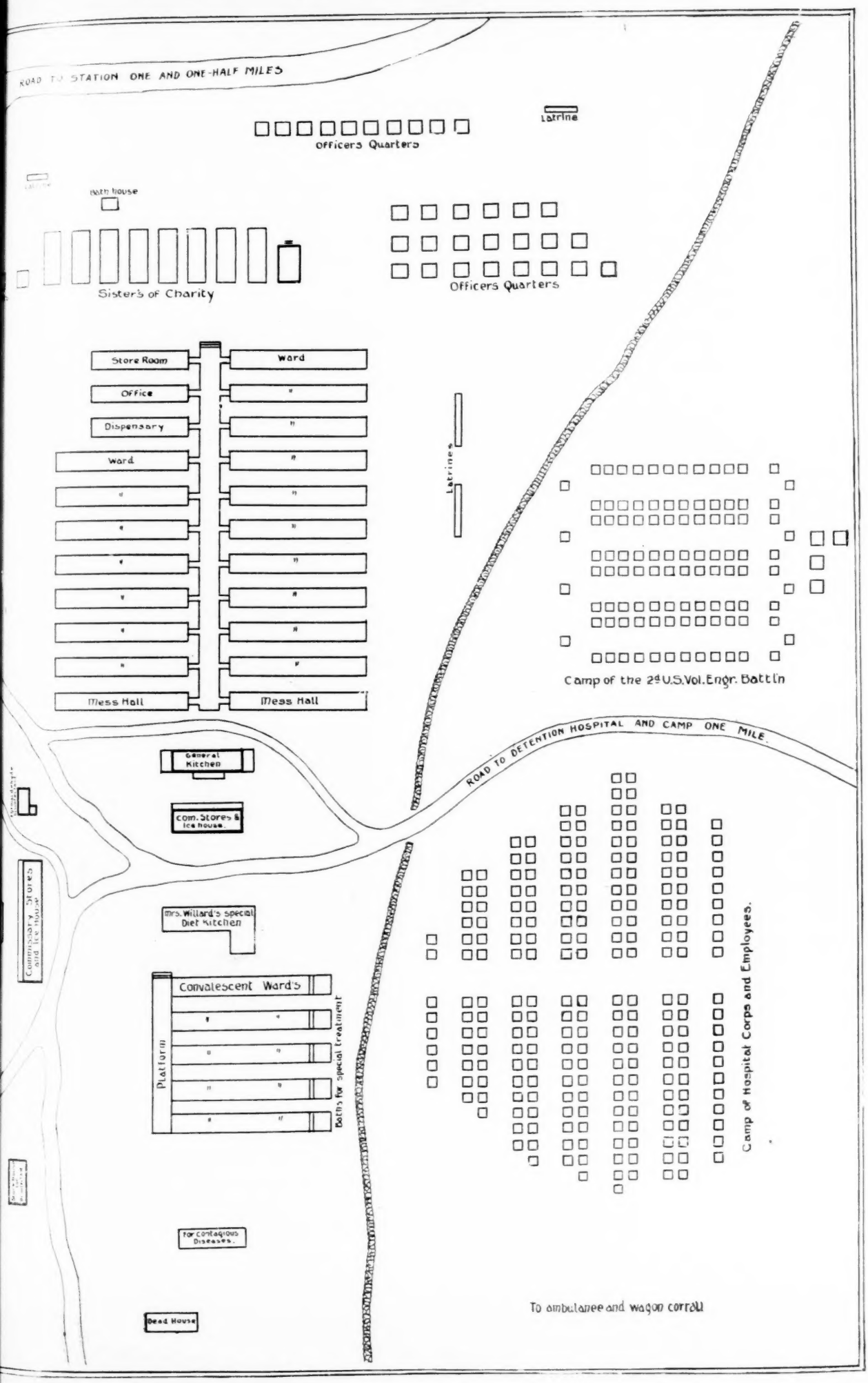
Mess Hall

Isolation Ward

Latrine

Latrines

Construction of Ward


ROAD TO STATION ONE AND ONE-HALF MILES
Officers Quarters
Latrine
Bath House
Sisters of Charity
Officers Quarters
Store Room
Office
Dispensary
Ward
Ward
Mess Hall
Mess Hall
Latrines
Camp of the 2d U.S. Vol. Engr. Battln
ROAD TO DETENTION HOSPITAL AND CAMP ONE MILE.
General Kitchen
Com. Stores & Ice house.
Commissary Stores and Ice House
Mrs. Willard's special Diet Kitchen
Convalescent Ward's
Platform
Baths for special treatment
Camp of Hospital Corps and Employees.
For contagious Diseases.
Dead House
To ambulance and wagon corrall

equipped hospitals. It was fortunate that the enemy yielded to our arms so early, and made it possible for our troops to return so soon to the invigorating climate of the North for proper care and speedy recuperation. Those who saw the different regiments leave our State and national camps would find it difficult to recognize and identify the soldiers of the Cuban campaign. The men left in excellent spirits. Most of them return as mere shadows of their former selves. The pale faces, the sunken eyes, the staggering gait and the emaciated forms show only too plainly the effects of climate and disease. Many of them are wrecks for life, others are candidates for a premature grave, and hundreds will require the most careful attention and treatment before they regain the vigor they lost in Cuba. The surgery of Camp Wikoff represents cases and pathologic conditions which we would expect to occur in men suffering from the effects of disease, exposure and the debilitating effects of a tropical climate. Our work has consisted

MAJOR HEITZMANN, SURGEON U.S.A.

largely in the treatment of abscesses and operations for fistula ani and hemorrhoids. I was ordered to Camp Wikoff on my return from Porto Rico, and reported for duty August 22. The field operating tent and surgical wards, already in construction, were completed in two days. I have been assisted in my surgical work by Major Charles Adams, U. S. V., and Acting Assistant-Surgeon Henry Greenleaf. The Sisters of Charity have charge of the surgical wards, and two of them make the necessary preparations for operation and assist in the operating tent.

SURGICAL HOSPITAL.

The surgical hospital at Camp Wikoff is a part of the general hospital. It consists of nine wall tents, placed end-to-end and supported by a substantial wooden frame and floored throughout, constituting a pavilion of 126 x 14 feet in extent. The front tent, No. 1, facing southeast, boarded at the sides, with a broad table shelf on either hand, is used as an operating tent. It is equipped with a regulation operating table, iron frame and top. Sterilized dressings, gauze sponges, ligatures, etc., are kept in sterilized towels in readiness for use at any moment. The shelves and tables are covered with white rubber cloth, which is kept scrupulously clean. The instruments, after sterilization, are kept in trays containing a 2 per cent. solution of carbolic acid. Saline and antiseptic solutions are kept ready for use in four-gallon bottles. All surgical paraphernalia not in use are covered by clean white sheets. The second tent, open at the sides for free ventilation and coolness, is used for the office of the surgeon in charge. It is supplied with a field desk, table and chairs. Section No. 3 is the preparation room. The instruments are kept here under lock

MAJOR BROWER, SURGEON U.S.A., IN HIS OFFICE, GENERAL HOSPITAL, CAMP WIKOFF.

and key. Two sterilizers, basins, buckets, pitchers and a table constitute the equipment of this room. A glass irrigator and a number of fountain syringes furnish the facilities for irrigation. A field operating case, a Paquelin cautery, a full set of dental forceps, a complete set of urethral instruments, a case of eye and ear instruments and aspirator have furnished all the instruments required. The instruments are sterilized by boiling, the dressings by dry heat.

Hand disinfection consists in scrubbing for at least five minutes in hot water and potash soap, washing in absolute alcohol, followed by prolonged immersion in a 1-1000 solution of bichloride. Just before the operation is commenced the hands are washed once more in alcohol. The field of operation is disinfected in the same manner as the hands. Section 5 answers the

urpose of a pantry and kitchen for special diet. From here he distribution of food takes place as it is received from the ain kitchen of the hospital. Between the supply tent and he pantry is an open passage-way four feet wide, through hich the patients and nurses enter and leave the hospital. he four tents remaining are used for wards, having a capacity f 32 beds. This hospital in the course of a few days was filled, hen ward A, adjacent, occupied by medical cases, was evacuted to make room for surgical cases. The present arrangeents affords room for seventy-five surgical patients. At the resent time, September 10, every bed is occupied. The six isters of Charity in charge are assisted by three orderlies from he Hospital corps. Patients are prepared for operations with roper antiseptic precautions, and no pains are spared to give hem the benefit of modern surgical methods in every detail, uring their stay in the hospital. The nursing and care of the ick are faultless, and the diet is not only ample in quantity nd quality, but often luxurious, far exceeding what is served n the table of the officers mess tent. The patients much reuced in flesh and strength by fever or suppurative affections, re furnished with a liberal supply of stimulants including hampagne and port wine. With very few exceptions indeed, rompt improvement has followed the operative interventions, nore especially in the cases of large phlegmonous and ischiorectal abscesses. It is my intention in writing this paper to ive the profession a general idea of the surgical work done in Camp Wikoff since I took charge of this branch of the hospial work August 22. Nothing had been done up to that time n caring for the surgical cases. The hospital was overrowded, and the available physicians were extremely busy in ooking after the welfare and accommodation of the fever paients. In two days I had the surgical ward in a condition to eceive patients, and on the third day the first operations were erformed. At first a pocket case did sole duty in the operatng room. The hospital outfit and supplies were picked up ere and there, and in a few days we were ready to begin sysematic, efficient work. Many of the patients were so weak nd anemic that the administration of an anesthetic was eemed dangerous. In such cases the patients were given trychnia subcutaneously and a liberal dose of whisky by the outh. Patients considerably enfeebled by disease were given ther in preference to chloroform. Chloroform by the drop ethod was the anesthetic of choice in all cases where the genral conditions of the patient did not contraindicate its use. Operations were performed during the forenoon, beginning at o'clock.

TOOTHACHE.

Of the organs frequently affected among the returning soldiers were the teeth. Patients suffering from carious aching eeth were numerous. In most instances they presented evidences of serious malnutrition following disease and exposure; uppurative alveolitis was less frequent. Infection of many oral cavities showed that teeth had been sadly neglected during the campaign. In Cuba and Porto Rico I saw occasionally a soldier with a tooth brush under the hat band, but I have reason to believe that most of the tooth brushes were either left at home or thrown away on the march, as unnecessary articles of the limited toilet outfit. I did all I could in the way of conservative dentistry by cleaning out cavities and packing with cotton saturated with carbolic acid, but in the majority of cases the patients returned and insisted on having the painful tooth extracted. Tooth extraction was a conspicuous and grateful part of the surgery of Camp Wikoff. Hardly a day passed without two or three such operations. A very complete set of tooth forceps furnished by the government did good service in relieving the victims of toothache of their agonizing suffering. Much has been said in favor of attaching a dentist to each regiment to look after the teeth of the men, and the observations made in Camp Wykoff tend to support the propriety of such a much-needed addition to the medical service. It is interesting to know that among these patients there was not a single officer, undoubtedly because the officers were more particular in the care of their teeth than the privates.

HERNIA.

The number of hernias that presented themselves in Camp Wikoff astonished us all. In every case the statements of the patients were to the effect that the hernia appeared since the enlistment. It might be surmised that at least in some of the cases this physical defect was overlooked during the examination. This might have been so in isolated instances, in the case of volunteers, but such a view would not hold good in men belonging to the regular army. I saw more cases of hernia in men belonging to the latter, than the former branch of the military service. Our army in Cuba was not subjected for any length of time to hard marching or violent exertions of any kind, consequently the causes which led to hernia must be sought outside of such mechanical influences. Careful examination appeared to prove that in most, if not in all cases, the hernia was of recent origin. I attribute the hernia-formation principally to the relaxation of tissue, caused by disease and its effects, aided undoubtedly by the prevalence of intestinal affections which must have often resulted in increased abnormal intra abdominal tension. The uncertainty of the duration of the encampment induced me to advise against operative interference, and in most cases the general condition of the patients was such as to constitute in itself a strong contraindication to the performance of a radical operation. The patients were fitted with a truss and advised to have a radical operation performed after their general health was restored, after leaving the service or obtaining a furlough.

VARICOCELE.

The frequency with which varicocele is met with in men from 18 to 45 years was shown in the examination of 9901 volunteers in Camp Tanner, Illinois. As a member of the board of examiners, I was very anxious to obtain accurate information regarding this subject, and accurate notes were kept at the time. We found varicocele, slight, 992; medium, 692; large, 295. Of the slight cases 10 were double, 7 of the right side only; of the medium cases, 7 were double, and 4 of the right side only; of the large cases 4 were of the right side only. The percentage of varicoceles to total number examined was 21.17. Only six were regarded as physical disabilities, and those on account of size and pain. At that time I wrote a paper calling attention to the great frequency of varicocele in men of the age for military service, and claimed that ordinary varicocele was no valid objection to the enlistment of men for military duty. Of the more than 15000 men who returned from Cuba and were landed at Montauk, only five cases of variococele applied for treatment at the surgical ward. In all of these cases the local symptoms were such as to warrant an operation. The operation was performed by excising through a straight incision, directly over the cord, the enlarged veins between double ligatures. The veins were carefully isolated by dissection from the spermatic cord and the accompanying artery. After excision the two stumps were brought together by a single catgut suture, and by tying over this a thread of one of the ligatures left long from each side. The stumps were buried by several fine catgut sutures with which the deep layers of the tissues were united. The external wound was always closed with horsehair sutures. Elongation of the scrotum sufficient in degree to require attention was corrected by transverse suturing of the external wound. The wound was sealed with collodium, a few narrow strips of iodoform gauze, and a pledget of absorbent cotton over which the usual dressing and bandage were applied.

Case 1.—John D. Deboer, aged 24, colored; Troop B, First Cavalry; has had varicocele for the last eighteen months. Enlisted five weeks ago. Marked ectasia of the spermatic veins on the left side with corresponding elongation of scrotum on

same side. He has had no pain, but much discomfort in hot weather from relaxation and dragging sensation. Operation under chloroform narcosis August 31. General health not much impaired.

Case 2.—William Cantwell, age 31, Company B, Sixteenth Infantry; has been in the service fourteen years. Varicocele appeared eighteen months ago. Since he entered the active service the swelling has often been painful, especially during forced marches and in hot weather. He is much concerned about his condition, and submitted willingly to the operation, which was performed under ether anesthesia September 3. On exposing the varicose veins it was found that the tunica vaginalis had remained patent from the external inguinal ring to the testicle, but contained no fluid. The veins were isolated with some difficulty from the cord and the spermatic artery. After disposing of the vein stumps in the usual way the tunica vaginalis was closed with fine catgut sutures over the cord. The scrotum was shortened by transverse suturing of the wound.

Case 3.—Wm. Reed, age 23, colored; Troop H, Ninth Cavalry. Made its appearance soon after his enlistment two months ago. The varicocele is of large size and gives rise to much pain on riding or walking any distance. Operation under chloroform narcosis September 3.

Case 4.—Robert Duseman, age 21, Second Volunteer Engineers. Entered the service two months ago. Six weeks ago, during drill, he bruised the left side of the scrotum, and attributes the varicocele to this cause. He complains of a dragging sensation in the testicle on the left side, the seat of the varicocele of medium size. Usual operation under ether, September 11.

In all of these cases the general health of the patients was not much impaired, and the wounds healed rapidly by primary intention.

HYDROCELE.

Hydrocele from puberty to the age of 45 occurs much less frequently than varicocele. Of the 9901 cases examined in Camp Tanner, we found only 49 cases of hydrocele of the tunica vaginalis and 18 of the cord. Only one case of hydrocele of the tunica vaginalis came for treatment to the surgical ward of Camp Wikoff.

Case 5.—John Craigie, Company E, First Artillery, a young soldier whose health had become greatly undermined by malaria, was sent from the medical to the surgical ward, for a painful affection of the left testicle of a few days' duration. Patient very anemic and emaciated. A few days ago, on recovering from his illness for which he had been sent to the hospital, the left testicle became painful and tender, accompanied by a gradually increasing swelling. He came under surgical treatment August 27. Careful examination revealed an acute hydrocele of the tunica vaginalis on the left side, without any palpable visceral lesions of the testicle or epidydimis. The fluid, straw colored, was evacuated by tapping with a small trocar. One dram of equal parts of alcohol and carbolic acid was injected. The reaction was moderate and the patient left a few days later, the swelling gradually diminishing in size.

BONES AND JOINTS.

Only a few cases of injury and disease of bones and joints came under observation in the surgical department of the general hospital, but these isolated cases present features of interest sufficient to justify mention in connection with the subject of this communication.

Case 6.—Gunshot fracture of femur. S. M. Wetmore, age 25, trumpeter, Troop D, First Volunteer Cavalry, was shot through the right thigh at the junction of the lower with the middle third, the bullet passing in the antero posterior direction, the wound of exit being on a higher level than the wound of entrance. The wounds were dressed with idoform and healed by primary intention. Just before he was transferred from the hospital at Siboney to the *Relief* he became very much debilitated and manifested other and more characteristic symptoms of iodoform intoxication. A plaster cast was applied, and he was sent to the fever camp as a case of yellow fever—a diagnosis which was never confirmed by the physicians in charge of the hospital. He suffered from malaria, and his present condition indicates to what extent the malarial intoxication has advanced. He is extremely anemic, and emaciated to a skeleton. The spleen is much enlarged. The fractured limb is shortened two inches and a half; marked overlapping of fragments; union fibrous. Plaster of Paris bandage reapplied. Tonic and stimulating treatment.

Case 7.—R. Whitington, aged 25, First Volunteer Cavalry, on August 14 was riding bareback, when his horse made a quick turn and in tumbling over an embankment the horse fell upon his left leg, producing an oblique fracture of the tibia about two inches above the base of the malleolus, and of the fibula about four inches higher. For some days the limb was placed in a fracture box, but it was found impossible to immobilize the fragments properly. During this time the patient suffered from pain and loss of sleep. August 27 he was placed under the influence of chloroform, the fragments were properly adjusted and the limb immobilized in a plaster of Paris splint extending from the base of the toes to the knee. Since that time he has been free from pain and has slept without the use of anodynes.

Case 8.—Maj.-Gen. S. B. M. Young injured his ankylosed elbow-joint, September 2, and received first aid at the surgical ward the next morning. During the War of the Rebellion he received two gunshot wounds of the right arm. One shattered the lower third of the humerus, the other perforated the elbow joint. After a prolonged siege of suppuration he finally recovered with ankylosis of the elbow-joint, in flexion at an angle of about 110 degrees, and in a position of marked pronation. September 1 he stumbled and fell, striking upon the hand and elbow. He complains of severe pain in and about the joint. The elbow-joint is swollen and very painful on pressure and manipulation. Ecchymosis over both condyles. There is some motion but no crepitation, indicating the existence of ruptured intra and periarticular adhesions. The patient states that this is the fourth time since the ankylosis occurred that it has been broken by injury of some sort. The limb was padded with a thick layer of cotton from the base of the fingers to the shoulder-joint, over which a light plaster of Paris bandage was applied. The patient was placed in charge of Major Nancrede, his attending physician, who a few days later substituted for the plaster dressing an angular wire splint. In less than a week he reported for duty at Camp Meade.

Case 9.—Thomas A. McDonald, age 24, Second Infantry. While in action before Santiago the stock of his gun was struck by the fragment of a shell, the arm was violently twisted and the radius fractured. The forearm now presents the characteristic "silver fork" deformity of an imperfectly reduced Colles' fracture. There is swelling of the wrist, inability to use fingers, and pain on attempted pronation and supination. Massage, manipulation and electricity advised.

Case 10.—Preston Guthrie, aged 34, Company F, Twentieth Infantry, re-enlisted three and one-half months ago. States that he cut his left arm two years ago. The wound was slow in healing and left a scar adherent to the underlying ulna. Nothing in the clinical history would indicate that the bone was affected at that time. A contusion of same region occured while loading a transport in Cuba, which was followed by a complexus of symptoms pointing to the existence of a central osteomyelitis. An abscess which formed later ruptured through the old scar, an occurrence which was followed by prompt relief. A moderate discharge has continued since. Examination made August 26 disclosed two fistulous openings over the posterior surface and center of the ulna, leading into a central osteomyelitic cavity. Ulna at the seat of disease considerably enlarged. Through a straight incision the fistulous openings in the involucrum were exposed and the cavity freely laid open by chiselling. A sequestrum lying loosely in the bone cavity was removed and the granulations lining the cavity scraped out by a vigorous use of the sharp spoon. After thorough disinfection of the cavity the periosteum was sutured carefully, over which the wound was closed in the usual manner, leaving only a small space for gauze drainage. The wound remained aseptic and healed rapidly by primary intention.

Case 11.—George Oppel, aged 21, enlisted in the Second Infantry one month ago. He was admitted to the surgical ward with a fluctuating swelling over the inner aspect and a little above the left knee joint. Ten years ago he was struck in this region with a brick and suffered from an acute bursitis. The bursa has been enlarged ever since, but has not been painful until recently. There is no tubercular history in his family. The swelling is flat and in circumference is as large as a medium-sized orange. On palpation no fluctuations can be felt, the sensation imparted being of a semi-elastic nature. The swelling is somewhat tender to touch and is painful when he attempts to walk. August 31, the patient being under the influence of a general anesthetic, the bursa was punctured with a small trocar in three different directions through the same opening in the skin and was thoroughly injected with a 5 per cent. solution of carbolic acid. Pressure was applied over the bursa and the limb immobilized upon a posterior splint. In the course of a week the swelling had almost entirely disappeared and the patient returned to his command for duty.

REMOVAL OF FOREIGN BODIES.

Two interesting cases of removal of a foreign body lodged in the tissues presented themselves for operative treatment.

Case 12.—Benjamin Nelson, age 23, Company F, Third Infantry. Came under observation and treatment September 6. Three years ago he fell backward against a window and sustained several cuts of the scalp by fragments of broken glass. The wounds healed rapidly without suppuration. After his recovery he was aware of the presence of a piece of glass which had remained encysted in the pericranial tissues ever since, without giving rise to any inconvenience until recently. A few weeks ago the scalp over the embedded foreign body was bruised, and since that time it has caused irritation and pain. The piece of glass could be readily outlined by palpation. On the day mentioned, without anesthesia, a straight incision parallel to the long axis of the foreign body was made. No suppuration within or outside of the capsule. The piece of glass was found surrounded by a firm capsule of fibrous tisue and measured two centimeters in length and two-tenths of a centimeter square at the end. The broken surface was irregular in outline. The wound was sutured with horsehair and union was found complete at the time of his discharge, September 11.

Case 13.—Sergt. Oscar F. Winter, age 52, Company F, Ninth Infantry, seventeen years in service. On July 2, while in the act of rising just behind the trenches, he was wounded by the bursting of a shell near him. He was confident at the time, from the sensation experienced, that he had received a blow from a large fragment of shell on the crest of the left ilium. He says a large ecchymosis formed at once and he could see no evidence of penetration. He was assured by a medical officer that he had suffered a contusion only, that there had been no penetration. He says, however, on being questioned, that a small rent existed in the clothing over the supposed contusion, but is very positive that he must have been struck by the convex side of a large piece of the bursting shell. An abscess developed soon after the injury was received and has discharged at a point near the anterior superior spine of the ilium and the resulting sinus has remained since. The patient has done duty without missing a day since he received the wound, until reaching Camp Wikoff. The existence of an abscess cavity and the history of an opening in the clothing led to exploration for a foreign body. The existing opening was slightly enlarged, under chloroform anesthesia, and exploration of the cavity with the finger located a shrapnell ball at about 3½ inches downward from the opening of the sinus. Counter-opening was made at this point and the ball extracted. Tubular drainage, irrigation with peroxid of hydrogen and 2½ per cent. carbolic solutions and moist carbolic dressing. Speedy healing of the wounds.

(To be continued.)

SOCIETY PROCEEDINGS.

Chicago Medical Society.

Regular Meeting, Nov. 2, 1898.

Dr. ARTHUR D. BEVAN, the president, occupied the chair.

Dr. E. J. SENN exhibited a patient upon whom he had performed a plastic operation following recurrent carcinoma of the breast.

Dr. A. R. SMALL reported a case of comminuted fracture of the patella. The patient was a victim of the Wabash Avenue fire on March 16, 1898. The left patella was broken into several pieces. The leg was put up in splints, and the result was excellent. It was not found necessary to wire the fragments.

Dr. ARTHUR D. BEVAN has demonstrated beyond doubt, by means of the X-ray, within the last two or three years, that bony union occurs in fractures of the patella treated by the conservative method, consequently it is not necessary to wire the fragments in many cases.

Dr. JOHN RIDLON exhibited a case of infantile paralysis affecting only the shoulder muscles. The child is 3 years of age. The case is undoubtedly one of anterior poliomyelitis, which came on when the child was a little less than 3 years of age, with the ordinary symptoms, but involving only the shoulder muscles. He said that Dr. Archibald Church has a photograph of a similar case affecting the arm muscles, but not the forearm and hand muscles.

EXTENSIVE FISTULA IN ANO.

Dr. J. R. PENNINGTON reported a case and exhibited the patient. She was referred to him by her physician, about eighteen months ago, then suffering from what is commonly called a "horshoe fistula." He said that this fistula is frequently, though not always, preceded by an abscess situated between the rectum and coccyx and beneath the raphe. In a typic case the pus burrows on both sides of the rectum and into the bowel dorsally between the sphincters. Cripps says "the matter originally collects in one or other of the ischio-rectal fossæ, then makes its way behind the bowel to the fossa of the opposite side." From inspection and examination it is often impossible to measure the gravity of a case of fistula in ano. One may not suspect its complexity and extent until after the first incision has been made. The presence of only one external opening does not necessarily signify a simple fistula. He has seen some very extensive and complex fistulæ with only one external opening. That was the condition of affairs in this case. In operating upon these cases it is important to recognize their conformation—especially is this true when there is one or more external openings on each side of the anus—and to bear in mind that these tracks have a home in common. Otherwise the operator is apt to proceed as though he had two separate and distinct fistulæ with which to deal, and by following the advice given in some text books, slit up first one sinus, then the other, and, when too late to remedy, recognize that he has divided the sphincter in two or more places; that his patient has incontinence of feces and a remaining fistula—a very undesirable result, because to operate and not cure the patient is to bring disrepute on rectal surgery, and for the operation to be followed by incontinence of feces is to leave the patient in a most mortifying and loathsome condition, which is not apt to redound to the surgeon's credit.

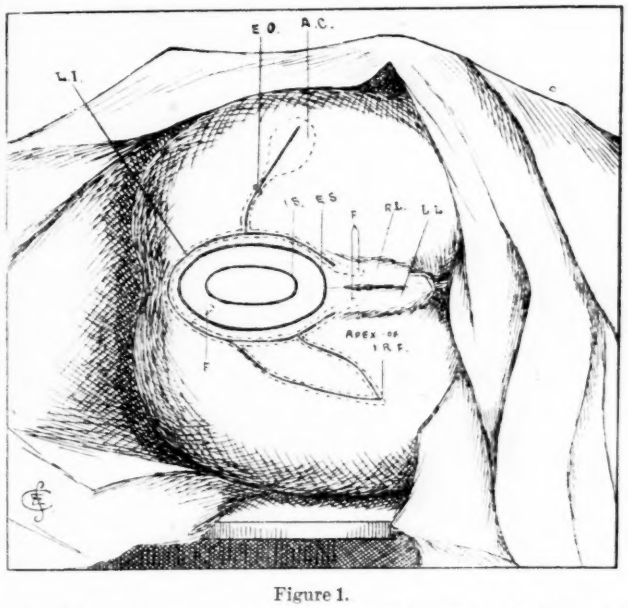


Figure 1.

In this patient there was an external opening in the right buttock and an internal one on the left aspect of the bowel.

With reference to finding the internal opening when operating, Mathews says: "What this has to do with the operation for fistula, I must confess, I can not understand." Then he continues by saying that "if during the operation I introduce my grooved director and fail to find any internal opening, when one really exists, I push the instrument through the mucous membrane, then divide the tissues upon it, and search up the bowel from the cut, allowing the director to go as high as it will. Then, dividing again, we, of course, include any internal opening that may exist." Had Dr. Pennington followed this advice and pushed the director through the mucous membrane and divided the structures over it, incontinence would certainly have followed and the internal opening remained undivided. Beginning at the external opening he divided the fistulous tracks, as indicated by the heavy lines in the right buttock, to a point just beyond the track running into the bowel. He then discovered this latter fistula, which he thoroughly curetted and irrigated with a bichlorid solution. He purposely, at this seance, did not continue the division farther on the left side, but thought to try to close the canal extending on to the left labia by means of injections. This failed. In about three weeks after the first operation he opened this track, and to his surprise, found the two tracks leading off from this one to the very apex of the left ischio-rectal fossa. This necessitated a complete division of the

fossa. The dotted lines in Fig. 1 show fistulous tracks, and heavy lines, incisions made. The tuberosity of the ischium extended almost an inch above the base of the incision on the right side. The photograph, which was taken seven months after the operation, shows the great atrophy of the buttock, and gives only a meager idea of the destructiveness of this fistula.

Figure 2.

The Doctor called attention to the fact that the sphincter was not divided; there is no incontinence, and that the patient made an uneventful recovery; also, that by operating in this manner feces do not come in contact with the wound during defecation.

RECTAL INCONTINENCE.

The second case he reported was one of incontinence of feces following an operation for a simple fistula, while in the first case no incontinence followed operation for extensive and complete fistula. This patient says that she was operated upon two years ago by a good surgeon. She had been sent to him to have the function of the divided sphincter restored. Why an operation for fistula is followed by incontinence in some cases and not in others, it is difficult to say. Smith believes it to be due, not so much to the division of the sphincters as to the severing of the muscular fibers of the lower part of the rectum. Esmarch thinks it due to the division of the nerves supplying the muscles more than the division of the muscular fibers; while Kelsey holds to the theory that it is due to the vicious cicatrization, by which the divided ends of the muscles are not brought into apposition. The Doctor's own belief is that it is due as much to a want of technic in operating and inefficient after-treatment as to any other one cause. In bad cases flatus is passed without treatment as to any other one cause. In bad cases flatus is passed without the slightest warning, and the contents of the rectum may be discharged into the clothing before the sufferer can reach the toilet room. This condition is often so mortifying that patients express a desire to die rather than to live. It is very gratifying, however, to know that most of these cases can be cured or at least made comparatively comfortable. In the less severe cases, much benefit may be derived from the use of drugs and from regulating the diet. It must be remembered, however, that in directing palliative treatment there is a great variation in peristaltic action; some persons defecating two or three times in twenty-four hours, other only once in forty-eight to seventy-two hours. In the former the stools are semi solid, while in the latter they are hard and scybalous-like. Hence the control of the feces in a patient with a weakened sphincter may be easy or difficult. In the more severe cases, where operative interference is indicated, the surgeon has ample opportunity to exercise all his surgical ingenuity in devising an operation for relieving this condition. In those cases where the remaining segments show signs of contractility, measures looking to their union and restoration of the muscle will be more or less successful. Among the measures may be mentioned: 1, Tait's operation upon the perineum; 2, application of the cautery; 3, exposing the cut ends of the divided sphincter, and their reunion by sutures. But when the nerve supply has been destroyed, the muscular segments greatly atrophied and displaced by cicatricial tissue, restoration becomes impossible. In such cases the operation devised and successfully performed by R. Gersuny of Vienna, and subsequently by A. P. Gerster of New York, which consists in separating all the coats for two and a half inches up the bowel, then securing the gut and twisting it upon itself in an arc of 360 degrees, and stitching it to the skin by sutures, will perhaps give the best result.

Dr. ALEXANDER HUGH FERGUSON reported a case of floating kidney, tubal pregnancy and gall-stones, in one patient, all treated surgically on two different occasions. The extra-uterine pregnancy occurred in the right tube. The patient was a private case, 30 years of age, and was referred to him by Drs. Franklin and Bergeron. She presented herself, complaining of pain in the umbilic region and of a tumor in the right lumbar region, which was movable. A diagnosis of floating kidney was apparent. The diagnosis of gall-stones was more difficult. In May last she had her first attack. She retired, after a hard day's work, and about three o'clock in the morning was seized with a sudden pain in the region of the umbilicus which woke her up. Vomiting was present. Hot fomentations were applied and the pain subsided as suddenly as it appeared. This was a point he wished to particularly emphasize as diagnostic of gall-stones attempting to leave the gall-bladder and falling back again. Two or three days after that she had a second attack. Pain came on suddenly, again about three o'clock in the morning, and was referred to the umbilic region, with vomiting. There was tenderness, on pressure, over the region of the gall-bladder. She had slight pyrexia, and a physician was called, who gave morphin. One dose of morphin and the application of hot fomentations sufficed to relieve her second attack. Five days later she had a third attack. The pain came on suddenly, and was again referred to the umbilic region, accompanied by vomiting. There was more tenderness over the region of the gall-bladder than during the other attacks. In the second day of the attack slight jaundice appeared and persisted for a week. This attack disabled her for about ten days. From the first week in June until July 31, when he saw her, she had had six or eight attacks. After this attack, a tumor was felt for the first time in the lumbar region. This was correctly diagnosticated as a floating kidney. A rubber bag inflated with air was bandaged over it; when she would have attacks of colic they would be relieved by the inflated bag pressing the kidney upward and backward, but the pain would not completely disappear. Upon manipulation it was found that the kidney could be pushed upon the brim of the pelvis over to the median line, and could be swept back to its place with that characteristic slip that is found in floating kidneys. Manipulations over the gall bladder at this time elicited very little tenderness, except when he gave a deep prod. If stones are present in the gall-bladder, patients usually complain of a pain when a deep prod is given them. From the above-mentioned data he made the double diagnosis of floating kidney and gall-stones.

An incision was made on the side to fix the floating kidney, through which the gall-bladder was explored and 114 gall-stones removed by the lumbar route. He believes it unwise to anchor the gall-bladder in the lumbar region because we would surely have a fistula; therefore, he made a button-hole incision in front, opposite the cartilage of the ninth rib, and the gall-bladder was sutured to its internal aspect and drained. He drains almost all gall-bladder cases. The woman made an uninterrupted recovery, left the hospital at the end of three weeks, and two days after had an attack of biliary colic. This attack came on suddenly; was accompanied by tympanites and tenderness which lasted for several days, when a second attack came on. This attack was more severe, was accompanied by vomiting and slight jaundice. A third attack was still more severe. The pain during these attacks was always referred to the umbilicus as in the previous attacks, and this is of importance from a diagnostic standpoint. Pain began in the region of the right ovary during the third attack. This new complication predominated during a fourth attack of biliary colic, with the greatest amount of pain in the right pelvis, and symptoms of internal hemorrhage. All the time jaundice was intermittent. Her husband wrote to him about her condition, and he told him to send her back to the hospital, where Dr. Ferguson made an examination, found tenderness in the region of the cystic duct, and a great deal of tenderness in the right ovarian region. Upon vaginal examination he found a large soft, boggy mass. She had menstruated just a week before entering the hospital the first time. He found milk in the breasts, and made a rather bold diagnosis of stone plying between the cystic and common ducts and extrauterine pregnancy. She was placed upon the operating table, and an incision made through the right rectus muscle low down, so as to deal with the mass in the right pelvis. The abdomen being opened, clotted and liquid blood was noticed. The pelvis was full of it. A mass was seen in the right pelvis; this was covered with a gauze pad for the time being. Going on the

left side of the patient, entering the abdominal cavity, passing two forefingers of his left hand through the foramen of Winslow at the junction of the cystic and common ducts, he felt an irregularly shaped stone. In trying to force it up into the gall-bladder, it slipped away and went in the direction of the common duct. He went after it again and pushed it into the gall-bladder; then incising the gall-bladder at the site of the former wound, which had closed, he slipped the stone out. He then demonstrated that the ducts were pervious, by forcing water through them into the duodenum. He exhibited the fetus, which measured three inches and a half from vertex to nates. Both fetus and placenta were found in the tube. The last operation was performed six weeks ago. He exhibited the patient and specimens.

Dr. ARTHUR D. BEVAN, in the discussion, narrated a case in which a diagnosis of gall-stones, floating kidney and appendicitis was made, an operation successfully performed and the diagnosis verified.

Dr. JAMES B. HERRICK contributed a paper on

THE TREATMENT OF ULCER OF THE STOMACH BY REST IN BED AND RECTAL FEEDING.

He regarded the writing of a paper on this old subject as warranted by the fact that many modern text-books make no mention whatever of rectal feeding in the treatment of ulcer; others recommend its use only in severe or exceptional cases, while a relatively small number advocate its employment in all cases. Physicians, too, often oppose the treatment or give it a half-hearted approval. By rest in bed and rectal feeding, the natural tendency of the ulcer toward recovery is encouraged by the removal of all mechanical and chemic irritation, so far as this is possible.

He said that several objections have been made to rectal feeding. The objection that the rectum will not submit to repeated enemata, but will give out, is answered by the fact that when suitable enemata are properly administered, the rectum will tolerate this method of treatment for many days or many weeks. Some contend that the nourishment is not absorbed, but its absorption is proven by experiment as well as by clinical observation. The argument against this method, that the patient can not stand it, that he will become too weak, can not endure the thirst, hunger, and weakness, is answered by the fact that patients do stand it and without complaining, and that when the matter is clearly set before them they submit to this method willingly. The objection that the treatment is inefficient and unsuccessful is answered by the successful results in the hands of physicians who have tried the method carefully, and by the fact that the trend of medical opinion is setting in toward rectal alimentation in all cases of ulcer of the stomach.

In carrying out the treatment it is important to secure the consent of the patient by a clear explanation of the reasons for the treatment, the method of carrying it out, the probable length of time required, etc. This relieves worry and restlessness on the part of the patient. The bowels should be emptied by a preliminary laxative and cleansing enema. Absolute rest in bed should be required for from two to six weeks. Nothing should be given by the mouth, not even water, for from three days to three weeks. Nourishing enemata should be given at regular intervals, say of four hours, by means of a soft rubber tube inserted high into the rectum. Enemata can be given once in twenty-four hours, a period of eight hours' rest, as, for example, from midnight to 8 o'clock in the morning, being desirable. The quantity and kind of food, as well as the hours, can be varied in individual cases. A simple enema of water is to be given every morning. This may be retained, in which case it quenches thirst; it may be rejected, acting as a cleansing enema. As pain, tenderness and vomiting cease, the enemata can be gradually withdrawn, and peptonized milk or other light diet carefully substituted by the mouth. The patient should be allowed to get out of bed only after rectal alimentation has been entirely stopped. It is best to keep the patient in bed for at least four weeks. Iron may be necessary for the chlorosis so commonly present. This should only be given when a light diet is tolerated. The results are an almost immediate lessening of pain, vomiting and nausea. There may be emaciation and weakness; that will disappear quickly when stomach feeding is resumed. A cure is the result in the larger number of recent cases. In old cases a cure, or at least improvement, will follow. Deep ulcers, very extensive ulcers, large amounts of scar tissue or adhesions may interfere with a perfect recovery. This rational method of treatment, allowing nature to work the cure, deserves the warmer endorsement of text-books and physicians, particularly as medicinal treatment is so unsatisfactory. It should be employed in every case, either mild or severe.

Dr. HENRY GRADLE read a paper on

PHLYCTENULAR OR SCROFULOUS OPHTHALMIA.

After referring to the frequency of this affection and its preponderance in girls, he described it as a disease of childhood, seen rarely after puberty and then only in patients who had been subject to it since early childhood. The characteristic lesion is the phlyctenule, not a vesicle but a translucent papule (of leucocytes), which in typic cases disappears by absorption in five to eight days. The serious aspect of the disease, however, is the liability to relapses, often in multiple form, the frequent delays in the disappearance of the phlyctenules, and particularly their transformation into larger papules; into corneal infiltrates, which often ulcerate; or into diffuse patches of superficial keratitis with new formation of blood vessels. All these manifestations are but metamorphoses or sequelæ of phlyctenules.

The causes of such an unfavorable course are often associated with adjoining lesions, the proof of which is furnished both by the coexistence and by the influence of treatment of these associated lesions upon the phlyctenular process. Among these injurious conditions are catarrhal conjunctivitis, and especially the transient smooth hypertrophy of the superior retrotarsal fold, called by the Germans *Schwellungskatarrh*. For the latter condition the author recommends nitrate of silver (if necessary, in the strength of 10 per cent. solution), to be applied strictly to the swollen fold of the conjunctiva. Important, likewise, is ulcerative blepharitis, to be treated with the stick of nitrate of silver and the yellow oxid salve.

Eczema is so frequent a coincidence that the disease has been termed "eczematous kerato-conjunctivitis," a name which the writer considers inappropriate, as the eye affection is neither clinically nor anatomically analogous to cutaneous eczema. Eczema of or near the eyelids exerts a distinctly injurious influence upon the eye lesions. Whether eczema at a distance is of equal importance is doubtful.

Purulent rhinitis is often, but by no means always, associated with phlyctenular disease. With it there is nearly always hypertrophy of the pharyngeal tonsil—adenoid vegetations. The latter condition requires surgical removal from intrinsic indication, but how much the nasal disease predisposes the eye to relapses, or to persistence of the phlyctenular lesions is an open question.

The direct cause of phlyctenular eruption is as yet unknown. The search for constant or characteristic microbes has been unsuccessful, and the most extensive researches by Axenfeld led to negative results. It is certain, however, that the exceptions to this rule are merely apparent, not real, for scrofulosis is at present a vague term, and not recognizable. The researches of Koch, and especially his disciple Petruschky, have made it almost certain that scrofulosis is identical with mild chronic poisoning of the juvenile organism by the toxins of the tubercle bacillus, usually hidden in some lymphatic gland. But some of the manifestations of scrofula—the tendency to eczema and the enlargement of the pharyngeal tonsil—are not themselves tubercular lesions, or due to the presence of the tubercle bacillus in the diseased locality, but they are evidently local chances due to other causes, favored, however, by the undermining of the resisting power of tubercular poisoning. The author regards phlyctenular ophthalmia in the same light, namely, as a lesion occurring mainly—if not exclusively—in a soil predisposed by poisoning from some forms of "latent" tuberculosis—in the lymph-glands. This view was supported by the characteristic reaction of some diagnostic injections of tuberculin in four cases.

On the basis of this view, and from extensive experience, he endorses the hygienic treatment generally adopted in tuberculosis, namely, an out-door life, proper feeding, baths, and, if indicated, cod-liver oil. These measures seem to protect fairly well against relapses, but their influence requires too long a time to be of immediate benefit as far as the attack at the time is concerned. In the local treatment he recognizes the influence of calomel dusted into the eye, especially when used two or three times daily. Atropin is of decided influence when there is pronounced ciliary irritability, and especially when the pupil is narrowed or resists the dilating influence of the drug. But whenever the process is not accompanied by much irritation, or when the pupil yields at once, atropin seems to exert no influence of any kind.

Dr. WELLER VAN HOOK described a hernia operation designed to do away with the need of splitting the aponeurosis of the external oblique muscle, in order that, in case of suppuration, the state of the patient need not be aggravated by the enlargement of the external ring. After treating the sac by partial amputation and drawing the stump back up the canal by means of a curved artery forceps and fastening it, after

Kocher's plan, to the tissues above the cord, he dissects up the aponeurosis of the external oblique from its muscle and frees Poupart's ligament by the finger introduced into the canal. A handled curved needle, unarmed, is then passed under Poupart's ligament at a point sufficiently below the cord to prevent the pinching of the cord at the internal ring. The point of the needle is received under the finger in the inguinal canal and is carried under the cord (raised by an assistant) to a point behind the inner pillar. The needle is then passed through the internal pillar and its point appears projecting through the aponeurosis of the external oblique. The needle is then threaded and withdrawn. The forefinger is next passed up the canal behind the cord until the inner portion of the thread is felt between the external oblique muscle and its aponeurosis. The finger is hooked around the thread in order to pull it out of the external ring along with the finger. Then the needle is introduced at a point about one-fourth of an inch inside the first point of introduction through the aponeurosis of the external oblique into the canal; it is guided with the finger down the canal to the external ring and is there again threaded with the suture end which was brought out by the finger. It will be seen that when the needle is withdrawn we have a suture by which we can draw together the internal pillar and the most posterior portion of Poupart's ligament. As many such sutures as may be desired are thus introduced and the external ring is closed by sutures in the usual way.

This operation would be impossible only in those rare cases in which Kocher's and McEwen's operations could not be performed, viz., when an inspection of the internal ring is imperative. There is no risk of injury to important structures, and the amount of time required for the operation is scarcely more than would be needed for an ordinary Bassini.

San Francisco County Medical Society.

November Meeting.

Dr. JELLINEC presented a paper, with a demonstration of a case, on

SPORADIC CRETINISM.

The first case reported was that of a female child, 4 years and 2 months old when first seen. The parents were Jews, but there was neither any family history nor any particular taint that could be ascertained. Up to the age of 9 months the child had developed normally, but after that time she began to exhibit the various indications of the disease. When first seen, about the middle of August, she weighed 25½ pounds and presented a perfect picture of cretinism. The could not be found the slightest trace of thyroid gland, and its absence was declared by the Doctor. Constipation was very marked, the bowels moving only every fifth to sixth day, and then only under cathartics. Treatment by tablets of thyroid extract was commenced, August 26. The dose at first was one-half a tablet per day, or the equivalent of .15 gm. of the gland. No effect was observed from this dose, at the end of a few days, so the quantity was increased to .3 gm., or one tablet per day. This had a very decided effect, for it produced copious stools and the child began to lose flesh very rapidly. The dose was therefore reduced to the former amount, one-half tablet. October 11, the child had lost two and one-half pounds, and was quite perceptibly improved. It was still a very well-marked case of the disease, and the Doctor expressed his intention of continuing the thyroid treatment and reporting the case to the Society from time to time.

The second case reported was much the same as the first, only it had been under treatment for some thirteen months, and consequently showed very marked improvement. When first seen the child was 5½ years old, 61 cm. in height, and weighed 19 pounds; its vocabulary consisted of nine words, most of them being so poorly articulated that they were unintelligible to any one unacquainted with it. The fontanelles were still as much unclosed as at the time of birth; there was no apparent thyroid, and there was every indication of cretinism. July 26, 1897, the treatment by thyroid gland tablets was commenced by the employment of one-half tablet per day, being equal to .15 gm.; this small dose had a very marked effect on the first day, producing four copious stools. The dose was therefore reduced to one quarter tablet, and then gradually increased to three tablets a day; at the end of a year the child was taking nine tablets a day, had grown 9.4 cm. in height and weighed 27 pounds. A look of intelligence had made its appearance, and the vocabulary was quite considerable; the fontanelles had closed. The child at this time could run about and play. The Doctor said that the size and nature of the dose would depend upon the individual case under treatment, but that the thyroid tablets would have to be taken throughout life.

Dr. WM. FITCH MCCHENEY said, in discussion, that the name "cretinism," by custom, is applied to those cases in which there is a congenital deficiency in the thyroid gland, and the name "myxedema" is confined to those cases in which the deficient secretion of the thyroid is an acquired characteristic. Where cretinism occurred only occasionally in a community, the term "sporadic" was applied. As to the pathology, three principal theories have been advanced to explain the conditions we find; a total absence of the thyroid gland; atrophy of the gland; goiter, in which cases we find a cystic or tumorous growth in the thyroid, the foreign growth limiting the physiologic activity of the gland, and thus preventing the proper amount of its secretion. He did not believe that there was often a total absence of the gland, for the reason that so many cases which before death had been pronounced to be without the thyroid, showed on postmortem examination that there was really a rudimentary gland present. He thought that atrophy or neoplasmic growth would explain almost all of the cases encountered. He said that, as Dr. Jellinec had mentioned seeing seven cases of this disease, and as Osler had some short time ago given a résumé of all the cases reported in the American press, which amounted to sixty in all, Dr. Jellinec had been very fortunate. As to the question of administering the thyroid gland tablets all through life, he did not agree with Dr. Jellinec. In his opinion, this was not necessary; experience seemed to have shown that if the gland was employed for a time, a certain improvement would result, but that improvement was noticed only up to a certain point, and that beyond that point the further administration of the gland had no effect whatever.

Dr. JOHN WAGNER asked as to the details of administration: when the tablets were given and how; whether with meals, before, or after eating, and whether dry or in what form. He had had no experience with the thyroid treatment, but he had hoped to get some information from the paper of Dr. Jellinec.

Dr. JELLINEC said, in reply to the discussion, that he had simply intended to demonstrate a case which he would again show to the Society after it had been under treatment for some time. He considered the terms "sporadic cretinism" and "myxedema" as synonymous terms. There could be no rule as to the method of giving the thyroid extract; circumstances must determine the method in each case. In some cases he gave it in one dose, in the morning dissolved in milk or soup, say of two or more tablets; he gave it in two or three doses in the same solutions. He had seen but two of the cases in this country, the others he had met with abroad, where they are very common, so common in fact, that nothing more is now written on the subject. Where there was total absence of the thyroid gland, as he thought was often the case, the tablets would have to be taken throughout life, though they could be suspended from time to time, for such periods as the patient could stand without the medicine. If the individual was not himself the possessor of a thyroid gland that could secrete, he would have to be artificially provided with this very necessary secretion.

Dr. A. MILES TAYLOR presented a paper on, and a report of a number of cases of

VAGINAL HYSTERECTOMY.

There were forty cases in all, with one death, and as the cases were very mixed, many of them being pus cases, the results were good. He claimed that they were much better results than could have been obtained in the same cases if abdominal operations had been undertaken in the same circumstances. Vaginal section for pelvic diseases was in every way, in his opinion, far superior to abdominal section, except in very rare cases. The patient is carefully prepared, when circumstances permit and placed in the lithotomy position; the uterus is then curetted and the instrument put aside and not again used during the operation; the posterior cul-de-sac is the most convenient point of entrance, generally, and the opening here is easily made. The cervix can then be drawn up and the opening dilated; with the patient then changed to the Trendelenburg position an ocular examination can be made that will be fully as satisfactory as the ocular examination by the abdominal incision, for with the use of the proper retractors the vaginal opening may be made as large as the abdominal and the distance to the parts within is about the same in the two cases. The technic of the operation in its various phases was then gone over by the Doctor, and a number of cases reported. Some of the cases mentioned are abstracted as follows:

Case 1.—Pelvic disease following a miscarriage. There had been great pain for a year, and for six months previous to the operation she had been delirious during her menstrual periods. When seen she had a temperature of 104, pulse of 120, and

reat tympanites and tenderness. The finger was introduced to the vagina, the posterior cul-de-sac ruptured, and a great uantity of pus poured forth. The pelvic cavity was well irrigated with salt solution, and one tube removed; the other be had sloughed off and was washed out. The opening was acked with gauze, and the patient did well till the fifth day, hen her temperature suddenly went up to 105, again rose to 06 at eight o'clock at night, and she died in a few hours. ostmortem examination showed the cause of death to be sepc cerebral meningitis.

Case 2.—Woman of 26 years; married; pain and discharge most continuously since marriage, three years before; one onth before seen, had been operated on for a lacerated cervix d perineum, but with only trifling benefit. Operation was erformed per vaginam, and on the incision being made a large mount of pus was evacuated; the pelvic cavity was irrigated d a large mass appeared which proved to be the left tube in he guise of a huge pus sac. Both tubes were removed and he pelvis irrigated with bichlorid solution, 1 to 8000, followed salt solution. The wound was then packed and the patient ade an uninterrupted recovery at the end of the third week. he has since remained well and has no pain nor discomfort.

Case 3.—Woman of 18 years, married for four months; for o months had not menstruated; had been pronounced pregnt: severe pain came on suddenly when arising from the ble. The diagnosis of ruptured extra-uterine pregnancy was ade and operation decided upon at once. Incision in poster cul-de sac was followed by free hemorrhage. The fetal ass was found, and the bleeding point located and tied off; he pelvis was then irrigated and packed and the patient made good recovery.

A number of other cases were reported, and the Doctor then mmed up his conclusions as follows: The vaginal route is to preferred for the reasons that there is less shock, less dan, no danger of hernia, it is easier to work on any of the pelc organs, the incisions are easier, the examination of the lvis more complete, drainage can be perfect, and it leaves e patient much more comfortable than the abdominal operaon, for movement in bed is not prevented after the operation. onservative surgery on the ovaries and uterus was the great sideratum of modern surgery, and it is far easier to make astic operations on these organs per vaginam than by the cision through the abdominal walls.

Dr. F. B. CARPENTER said that the vaginal operation was not be preferred in the majority of cases, but in some it was doubtedly the best. There was certainly less shock in the ginal operation, but when many adhesions had to be broken the abdominal route was preferable. He did not consider at irrigation was a good measure in most cases, and indeed many cases where there was pus in the tubes, it had been so g retained that it had ceased to be septic pus and, if libted into the pelvis, could not and did not do any damage. considered the operation per vaginam much more difficult an the abdominal operation, and thought its advantages re than counterbalanced by its disadvantages.

Dr. J. HENRY BARBAT thought that the results of the forty es reported could not have been better, for the cases were ost all very grave ones, and the occurrence of a single ath showed that great skill had been employed. He was of opinion that the special method followed by any operator o had the requisite ability was the best for that man, but s not the best necessarily for all men; some men could get tter results by the vaginal method, and others found the dominal method more satisfactory in their hands. It was gely a matter of the personal equation. In some cases the inal operation had much the advantage over the abdominal, this was not always the case.

The officers of the society for the ensuing year were then cted. Wm. H. Davis was elected president, E. F. Kelly, e-president, Philip King Brown, treasurer, and Geo. H. ans, secretary.

SELECTIONS.

oxins and Antitoxins.—The proceedings of the Royal Society July 29 contain a communication by Drs. C. J. Martin and Cherry, on the nature of the antagonism between toxins antitoxins. The authors refer to the discussions of this ject by Behring, Buchner and others beginning in 1894. y refer to Calmette's experiments in 1895 with cobra poison its antitoxin, which seemed to prove that the toxin of ke venom does not interact with its antitoxin *in vitro*, but *in corpore*, and therefore its action can not be explained as a simple chemic operation between the two. The sum of these and other experiments was that certain measures being found which destroyed either the toxin or the antitoxin, when these measures were applied to a mixture of the two *in vitro*, the one not affected remained active while the other became inert. The inference was that the interaction did not take place *in vitro*. The authors, however, point out that the absence of any account of the time during which the interaction should be permitted to continue, as a factor in the experiments, vitiates their results; and, while admitting that the same results can be repeated, they consider the conclusions founded on them unjustified, and assert that by modification of the factors—time, temperature and active masses—exactly opposite results may also be obtained. Their experiments tend to prove that since the toxin of diphtheria will pass through a gelatin filter, while the antitoxin will not, a mixture of the two *in vitro* would become separated by filtration and the filtered toxin would be active, unless it were previously neutralized by contact with the antitoxin *in vitro*. They found that a mixture of the proper neutralizing amounts, when left in contact at 30 degrees C. for two hours, was not active after filtration, proving thus that the antitoxin had neutralized the toxin. They say: "As the experiments are so simple as not to leave any possibility of experimental error, we turn our attention to our existing difference in the conditions under which Calmette and ourselves worked. As previously pointed out, Calmette absolutely neglected the possible influence of time, temperature and the relative proportions of the active masses of the toxin and and antitoxin present in his mixture. Up to the present we have investigated the value of the factors, time and proportion of active masses, and have shown that these are most important. Indeed, by altering either the one or the other, we can produce results which, if these factors be neglected, would lead to diametrically opposite conclusions. . . . We have not yet determined the influence of temperature upon the rapidity of the reaction, but our results so far seem sufficiently conclusive to decide the question and leave no room for doubt that the antagonism between the toxins of diphtheria and snake venom and their relative antitoxin is due to a direct chemic action which takes place between them, and further, that the opposite conclusion come to by Calmette, and presumably those of Wassermann, Nikanarow and Marenghi, were due to their disregard of the value of time as a factor in such chemic action." It may be remarked, in conclusion, that these experiments, of undoubted scientific value, of Drs. Martin and Cherry were conducted in the laboratories of the University of Melbourne, Australia, with the teaching staff of which institution both these young pathologists are connected. —*N. Y. Med. Jour.*, September 10.

Located by Skiagraphy.—Dr. de Schweinitz has recently reported a case of a piece of steel imbedded in the sclera for two and one-half years, localized by the Roentgen rays, according to Dr. W. M. Sweet's method. In November, 1895, a piece of steel entered the eye, probably near the corneal margin at the inner side. In March, 1896, a radiograph of the eye indicated that a foreign body was located in the orbit at the upper nasal side. It was deemed expedient to make search for it. In February, 1898, when Dr. de Schweinitz first saw the case, V. = 6/20; eye quiet; marks of a previous iritis; capsule and lens partly opaque; floating opacities in the vitreous. With undilated pupil no foreign body could be detected in the vitreous or in the coats of the eye. A series of skiagraphs located it 11 mm. below the center of the cornea, 3 mm. to the nasal side, and 10 mm. back of the cornea. A second series taken while the eye was rotated as far as possible downward shows a movement of the body practically equal to the extent of the rotation of the eyeball downward. This would seem to determine the sclera as the site of the body. With wide pupil dilation a small patch of choroidal atrophy streaked with pigment, and

with a black center, exactly in the position indicated by the radiographs, could be seen. Just over this location the sclera was sensitive to the touch of the probe. The field of vision was markedly contracted, and there was uncertain limitation opposite where the body was supposed to lie. The patient refused to permit an exploratory operation. Dr. Sweet has had an interesting experience in the localization of foreign bodies in the eyeball by his apparatus. The various methods that have been employed resolve themselves into a determination of the angle of the X ray tube with the foreign body and with one or more dense objects situated near the eyeball. Approximate results have been obtained from a study of the shadow of the foreign body in relation to the shadows of the orbital bones, but owing to the variations in the position of the eyeball, which have been shown by the investigations of Cohen to amount in healthy individuals to as much as 10 mm. behind the edge of the orbit and 12 mm. in front of the same, this method does not equal the accuracy possible by other means. Whatever form of indicating objects is used in working out the position of the foreign body, certain factors are essential to accurate results: 1. A tube should be used which may be run at high vacuum, in order that the rays readily penetrate the bones of the head. 2. The patient should be in the recumbent posture to ensure steadiness of the head and body. 3. The visual axis should be parallel with the plane of the plate at the side of the head, or if it deviates, the angle should be measured and allowed for in the determinations. 4. The situation of the indicating objects with respect to the center of the cornea in each individual case should be known, otherwise the determination of the location of the foreign body will vary with the varying situation of the eyeball in the orbit in different persons. 5. The angle of the tube with the indicating object must be accurately measured. The two indicators being parallel with each other and with the plate, the distance the shadow of one of the balls is posterior to that of the other is the measure of the distance that the source of the X-ray is carried to the front. The method has been employed in a number of cases of suspected foreign bodies in the eyeball and orbit, in seven of which the shadows of the bodies were obtained on the plate and their position indicated. Three of the cases were gunshot injuries, in which the findings were not verified by subsequent operation. *Maryland Medical Journal.*

PRACTICAL NOTES.

Telelectro-Therapeutics.—Gerest of Lyons cures hysteric paralysis by a series of electric discharges in the neighborhood of the patient, without contact. The effect is evidently similar to that of suggestion.—*Munich Med. Woch.*, November 1.

Dry Treatment of Prurigo.—The parts are dusted with a power of oxid of zinc, salicylic acid and talcum, and covered lightly with a protecting bandage changed every forty-eight hours. In two weeks there is no trace of the affection.—A. Monti: *Semaine Méd.*, November 2.

Orthoform for the Larynx.—Kassel prevents the coughing that usually follows the insufflation of the dry powder in anesthetizing the larynx, by injecting it in an emulsion of 25 parts orthoform to 100 parts olive oil, with the ordinary larnygeal syringe.—*Munich Med. Woch.*, November 1.

Danger Signal in Chloroform.—R. Lehmann states that if the patient keeps his eyes completely or partially open during the narcosis, and opens them whenever you try to close them, you can expect some accident, more or less severe. This phenomenon was noted 21 times in 329 anesthesias, and in each one there were either continuous vomiting, arrested respiration, peculiarly protracted agitation, or asphyxia and syncope, requiring artificial respiration.—*Semaine Méd.*, November 2.

Insomnia in Advanced Arteriosclerosis.—Professor Edgren Stockholm has been very successful in inducing refreshing sle without morphin, with rectal injections at night of antipyr 1 gm., diuretin 1 to 2 gm., or chloral 2 to 3 gm., in the advanc stages of arteriosclerosis when the heart suffers and insomn is frequent, with more or less dyspnea, vertigo, restlessne even delirium and hallucinations.—*Semaine Méd.*, October

Sero-therapeutics of Tuberculosis.—Maksutow has obtained serum from the juice extracted from a tuberculous abscess a cow, chopped fine, in a aqueous, alcohol-glycerin solutio Injected after filtering, into guinea-pigs and goats, it prevent infection and arrested lesions already under way. Every t was successful.—*St. Petersb. Med. Woch.*, October 29.

Accidental Nervous Enteritis.—When, in consequence of exp ure, violent emotion, insomnia, excesses, or other causes fecting the alimentary canal, there is distress and pain in t epigastrium and more or less diarrhea, the following prescri tion will be found agreeable and promptly effective: Tinct of opium x gtt., orange flower water 20 gm., old rum a simple syrup āā 40 gm. Mix in a glass of water and dri rapidly.—*Journ. de Méd, Paris*, October 30.

Ankle Clonus in Tabes.—Babinski considers the partial or to abolition of the ankle clonus an indication as important in t diagnosis of tabes as Westphal's sign. In most cases of tab there is more or less disturbance in both the knee jerk and a kle clonus, and in the rare cases in which a single reflex is fected, it is as liable to be the one as the other. He also ferentiates true sciatica by the abolition of the ankle clon the patient kneeling on a seat.—*Progrès Méd.* October 29.

Gelatin in Aneurysms.—This treatment, described in the Jou NAL, page 1180, has caused two deaths; one patient dying fr fresh tuberculosis a few months later, probably caused compression of the pulmonary artery by coagulations. T death of the second patient is more directly to be attribu to the treatment, as it produced coagulations in the neck a the rapid ischemia of encephalus. Huchard, therefore, vises weak concentrations, 8 to 10 days intervals and the tients in absolute repose. "With these precautions, gelati a rational and valuable means of assisting nature in her cu tive processes."—*Bulletin de l' Acad. de Méd*, October 2

The Migrainator.—It is proved by experience that headache sometimes be relieved by compression of the head: pers suffering from headache instinctively put their hands on t temples and feel great benefit therefrom. To make this co pression more efficacious, Dr. Sarason has suggested an ins ment, which he describes in the *Deutsche Med. Woch.* consists of two plates, which are firmly pressed on the tem by a spring, and the device looks very like a double truss. the compression of the temporal arteries the circulation of blood in the head is regulated and pain is relieved, especi in angiopathic hemicrania. The apparatus is termed a grainator." It is made in Munich.—London *Lancet*, Octob

Ringworm of the Scalp Treated by Sodium Chlorid.—Dr. Peti writes to the London *Lancet*, that for fifteen years he treated every case of ringworm which has come under his with chlorid of sodium, and with complete success in e case. The first case in which he used this treatment w chronic one of five years' standing. The child was well three weeks and had no return. Many of the cases which h been attended since have been of chronic character. method is the following: Have some chlorid of sodium fi powdered and then mix with a little vaselin to make an ment. The affected part having been shaved, rub this oint in well night and morning until the place is sore; this h from two to four days. Then use some simple applicati aid the healing of the part. When well from the sore the hairs will be found growing healthily and the tinea tri phyton destroyed.

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SATURDAY, NOVEMBER 26, 1898.

ON THE BACTERICIDAL FUNCTION OF THE LIVER AND THE ETIOLOGY OF PROGRESSIVE HEPATIC CIRRHOSIS.

Some time ago an editorial summary of recent investigations into the micrococcal origin of common cirrhosis of the liver, by ADAMI of Montreal, appeared in the JOURNAL. Since then ADAMI has continued to faithfully study the subject, and from a communication to the *British Medical Journal*, Oct. 22, 1898, it is seen that the results which he has obtained modify to a certain extent his earlier conclusions and throw a new light upon a hitherto but little recognized function of the liver, namely, the bactericidal. It will be recalled that he demonstrated the presence in cirrhotic livers of certain diplococci and peculiar degenerated bacterial forms. Subcultures from an organism isolated from a cirrhotic liver showed that it concerned an attenuated form or a variety of the colon bacillus.

ADAMI is not able, after weighing all the facts to be taken into consideration, to separate the micro-organisms of cirrhosis from the main group of colon bacilli. Inoculating broth cultures of the attenuated, as well as the ordinary form, into the circulation, he found that in twenty-four hours the liver cells were crowded with diplococcal organisms. They were present in greater numbers in the liver than in the spleen, kidneys, or other organs, and yet when cultures were made within a few hours after inoculation but few colonies were obtained from the liver, the cells of which were crowded with bacteria, whereas abundant growths resulted in the cultures made from the spleen, heart's blood and kidney. In these early cases he found the bile to be sterile.

From these observations it is clear that the liver cells do not act merely as excretory agents for the bacilli, but have pronounced bactericidal properties. The bacilli or diplococci seen in the liver were clearly, if not dead, at least incapable of proliferating to any great extent outside the body. The diplococcal forms, as well as other peculiar bodies, are looked upon as a result of degenerative changes. In certain cultures outside of the body, ADAMI also found that the bacillus took on the form of diplococci of fair size; strings of spheric bodies surrounded by a common substance can also form. These bodies are most easily demonstrable when the bacillus is grown under conditions unfavorable for active proliferation.

ADAMI then examined sections from the livers of a large number of postmortems, in which there were no changes characteristic of cirrhosis, and he was greatly surprised to find that these livers also contained, with scarcely an exception, these shadows of the colon or allied bacilli and, furthermore, that some of the fine brown pigment commonly seen in apparently healthy liver cells is undoubtedly to a certain extent the result of destruction of colon bacilli or other organisms. Hence, he concludes that the colon bacilli in healthy individuals frequently find their way into the liver cells from the portal circulation, and that one of the functions of the liver is to destroy these organisms through the action of the liver cells.

In cirrhosis of the liver the number of bacillary remnants and corpses is much greater than in the healthy liver, and this fact must be considered as pointing to a more or less direct connection between the microbes and the cirrhotic process. The facts obtained from the study of Pictou cattle disease in which, as alluded to in our former editorial, there is a marked cirrhosis of the liver, also favors the relationship between the microbes and the cirrhosis. ADAMI has not yet been able, however, to produce cirrhotic changes in laboratory animals on simple inoculation of the colon bacillus, so that if there is any connection between the organisms found in the liver and the interstitial proliferation, there must be other factors at work. ADAMI suggests that when the liver cells are lowered in their vitality, as for instance by the use of alcohol, then the bacilli, finding their entrance into the liver in larger numbers than usual, perhaps on account of the existence of chronic inflammatory changes in the digestive tract, which is a very familiar feature in the clinical history of cirrhosis in man, may produce the progressive proliferative changes characteristic of cirrhosis of the liver. ADAMI has undertaken experiments in which he is employing cultures of the colon bacillus alternately with alcohol, for the purpose of showing whether or not this condition of pathogenic agents may throw any further light upon the cirrhosis problem.

Leaving out of consideration, for the time being, the bearing which ADAMI's observations have upon the cirrhosis problem, it would seem that a very important result of his faithful labors is the demonstration of the bactericidal function of the liver above alluded to. It will be recalled that FUTTERER of Chicago has recently published the results of certain investigations[1] which show that bacteria introduced into the general or portal circulation, are eliminated largely through the liver by way of the bile in an almost incredibly short time after their introduction. From his results it would appear that the liver exercised an excretory function principally, whereas from ADAMI's results the bactericidal properties of the liver cells were brought forward quite clearly. In FUTTERER's experiments the colon bacillus, however, was not used, and it may be it will be found that the bactericidal functions of the liver are concerned more particularly with ridding the organism of this microbe.

TYPHOID FEVER IN MILITARY CAMPS.

There is an undercurrent of belief among our older medical men that the mortality from disease during the War with Spain was not relatively so great as that from which our volunteer troops suffered during the Civil War, and this belief is very generally shown by the veterans of the Grand Army, who recall the rapidity with which the original strength of their regiments melted away under the hardships and exposures of life in camps long before they had an opportunity of coming in contact with the enemy. The letter published in our last issue from Deputy Surgeon General SMART, gave a solid groundwork for this belief by defining very clearly the want of parallelism in the monthly lines of mortality in the two wars. Now that we have followed the labors of our army medical men in caring for the sick of the past few months, the figures which Dr. SMART presents from the old records have a deeper significance to us than they would have had prior to this recent experience.

We have all along had a realizing sense of the danger to which our troops would be exposed from the infection of typhoid fever. In our issue of June 4, when the public was viewing with alarm the possible ravages of yellow fever in the ranks of the volunteers, we took the position that the camp fever which was to be feared was typhoid and not yellow fever. The events of the succeeding months, both at Santiago and in the large camps in this country, have demonstrated the accuracy of our prognosis, which was the certain spread of the disease among the hastily raised and undisciplined regiments unless medical and line officers of every grade devoted themselves earnestly and intelligently to perfect the sanitary conditions of their camps. This was not done. In June and July typhoid fever appeared sporadically in certain of the regiments in these large camps. In some instances the disease was recognized as having been imported from State camps and in others to have been due to infection from outside the regimental lines. One fact is prominent: that it was not the result of an infection of the general water-supply, because had it been so the outbreak would have been fulminant, as in the epidemic some years ago at Bethlehem, Pa., when its water-supply became infected. The care given to the water-supply of the camps by the Quartermaster's Department at the instance of Surgeon-General STERNBERG may therefore be credited with the preservation of the troops from such an epidemic attack. But in August the prevalence of the disease became so increased as to call for a removal of the causes. Investigation by qualified inspectors determined that the increased prevalence had its origin in the general infection of the camp sites from the sporadic cases which had occurred, this general infection having become possible owing to overcrowding in the camps and the neglect of sanitary precautions in the care of the sinks; and the charge against the ordinarily insignificant house-fly of being an active agent in the propagation of the disease appears to have been accepted by those who had most experience of the conditions. Removal from the infected sites was immediately recommended and adopted as the best means of lessening the prevalence and ultimately subduing the outbreak. In September a marked diminution in the number of cases was observed.

Up to this time it has not been possible to obtain any data for a comparison with the spread of this fever among the young men who volunteered in 1861, because reports have come slowly into the office of the Surgeon-General, owing to the difficulties encountered by volunteer surgeons in making out official papers. The published records show that from May, 1861, to May, 1862, in which period are included both the maximum of prevalence and the maximum of fatality of typhoid fever, there were 30,550 cases and 517 deaths reported from an average strength of about 236,000 men or less than one-half of the 500,000 three-years' men then in the service. Among these cases are included those lighter febrile attacks which were recorded by the surgeons as simple or common continued fever, but which would now be regarded and reported as mild cases of typhoid fever. From the Surgeon-General of the Army we learn that up to September 30, 1898, there were reported 12,125 cases of typhoid fever, 640 of which were fatal, among commands aggregating about 167,000 men, or somewhat over 60 per cent. of the troops in service. Now if we calculate the number of cases and deaths which would have occurred in 167,000 men in five months if the rates of 1861-62 had prevailed in 1898, we would find that instead of having 12,125 cases, we would have had only 8308, and that instead of having only 640 deaths we would have had 1402 deaths. From this

[1] Medicine, 1897 and 1898.

We find that during the recent experience of our armies the prevalence of typhoid fever was greater by one-third and the deaths less by 55 per cent. than during the Civil War.

The fatality of typhoid fever, including the common continued cases aforesaid, during the first thirteen months of the Civil War was 1 in 6 cases or about 17 per cent. The fatality of the typhoid fever in our military camps and hospitals during the present year was 1 in 19 cases or a little over 5 per cent. This is certainly a most remarkable rate for typhoid fever, especially when consideration is given to the want of suitable medicines, food, nurses and shelter which, according to newspaper reports, characterized the service of the military hospitals—regimental, division and general. This low mortality rate is in itself sufficient to throw doubt upon all the general charges of neglect of the sick soldier and inadequate provision for his treatment. It is indeed so low as to leave a broad margin of doubt to overlap the reported cases and to suggest the inquiry whether every case reported as typhoid was in reality a case of that grave disease. We know that during epidemics of yellow fever, cases of remittent fever frequently increase the number of those reported as smitten by the prevailing disease. Something analogous may have taken place during the recent excitement concerning camp typhoid.

Our military brethren have learned much recently regarding the propagation of typhoid fever in the camps of newly raised troops. They have demonstrated the importance of strict discipline and military sanitation in the preservation of the strength of their commands. The typhoid epidemic of August last has been checked by radical measures involving the reorganization of practically all the troops in the service; but as the susceptibility of these troops to the typhoid infection has not been exhausted, the task of preserving them from such losses as were incurred during the Civil War yet remains before the Medical Department of the Army. Many months will have to elapse before we can gauge accurately the result of their efforts to protect the men from the infection of camp typhoid.

TIME AND MANNER OF THE ADMINISTRATION OF DRUGS.

Search for the causation of disease has so engrossed the attention of the medical profession that but little time is devoted to the proper manner of the restoration of the equilibrium to the normal. Surely to properly diagnose a case is not all of a physician's duty, for then the patient may die. What the patient desires most is to get well as quickly as possible. Those who practice irregular medicine have not been slow in learning this prejudice of the people, and have turned it into a financial gain to themselves.

Good-tasting medicine is a great catchpenny to homeopaths, for if it does no good it pleases the parents and thereby diverts money from the hands of physicians to the pockets of the irregulars. This practice is common and is most appreciated by those physicians who live in cities. How often do we hear it said that the reason so-and-so were "converted" was because they did not like to take the bad-tasting medicine of the "old-school" doctors. Those who carry out this line of thought logically and naturally think: If the weak or good-tasting medicine of the homeopaths cures as many people as the other, then why take any medicine at all? And from these premises it would not be far to believe the tenets of Christian scientists, because, forsooth, it is a matter of faith anyway.

An art that is yet to be learned is the time for the administration of drugs. What good will it do a patient to give a highly nutritive diet, if asafetida, cod-liver oil, guaiac or quinin is to be given immediately before meals? What good will a saline purgative do when given immediately after a meal? If the patient is awakened during the night to take nourishment and medicine at the same time, what good will he derive from either? Our sense of taste and smell must at least serve some purpose, for our appetite craves for that which is good. In disease, the appetite is held in abeyance, perverted and most uncertain. Drugs do not furnish nourishment; they simply act upon the force generated by the nourishment taken. Then why destroy this force? There then must be a proper time, and there must be a proper manner of giving medicine.

Elegance in pharmacy should be encouraged. The art of prescription-writing should be learned. In this respect we should copy after the French, who are noted for their elegance in pharmacy. Gelatin capsules serve a most valuable purpose to the regular physician; for unpalatable drugs may thus be taken without being tasted. Compressed triturates should be received with great joy, for they demonstrate the energy and enterprise of the "old school" doctors. All drugs, however, can not be put in tablet form. Some drugs are volatile and others hygroscopic; therefore solutions must always have a place. The art of disguising the taste of unpalatable drugs so that the patient can or *will* take them is one not easily acquired by the profession, because it is largely governed by manufacturers of patent medicines. With the child, a solution of magnesium sulphate or an emulsion of castor oil causes disobedience, and frequently the mother will not give them. Some children will vomit when given too sweet drugs, while the adult loses his appetite. Half an ounce of myrrh to a four-ounce mixture is usually sufficient.

Alcoholic extracts, such as cannabis indica, cubebs, or eucalyptus, precipitate on the addition of water, and therefore should be given in capsules. Solutions of quinin, bromids, and prescriptions containing fluid extracts may be rendered palatable by the addition of

a syrup containing aromatics, such as the elixir curacao of the National Formulary. Oleorisins are unsavory and frequently render a patient most rebellious. The taste of copaiba, cubebs and sandalwood remains in the mouth for hours. There is a little art required in dispensing these substances in gelatin capsules, as follows: Place the oil in the capsule by means of a pipette and seal with an alcoholic-ethereal solution of balsam of tolu. Rochelle or epsom salts are very soluble and should be dissolved in a small quantity of water and taken, and subsequently a large amount of water given if desired. Guaiac has come down to us from former times as a valuable remedy in rheumatism, gout, lithemia, etc., but there are few text-books which tell of its proper administration. Here again the manufacturers of patent medicines pervert legitimate pharmacy from its proper channels, because it is easier to give something else than to combine the guaiac in lozenge form by means of the confection of rose and flavored with oil of lemon and cloves. In cod liver oil we have one of the best known tonics, yet how often do we find that it can not be borne by the patient. To disguise its taste and render it palatable frequently baffles the physician, so that if one of the proprietary emulsions is not used the remedy may be abandoned. Cod liver oil that has become rancid can never be disguised, and will in nearly every case disturb the stomach, so its character should always be under the surveillance of the attending physician. In most cases an emulsion that is borne well can be prepared by taking the yolks of three eggs, triturating in a mortar for *at least* fifteen minutes, and then adding the oil teaspoonful by teaspoonful until the whole has been incorporated. The yolks of three eggs will suffice for a quart of finished emulsion. Probably the best ingredient to disguise its taste is bitter almond water, usually an ounce being required for a quart of emulsion.

While these few remedies are not all that might receive attention, it is hoped that a few hints may be thrown out which will benefit the general practitioner and keep legitimate pharmacy within proper bounds.

THE DANGER OF CHLOROFORM ANESTHESIA IN OPERATIONS UPON THE THROAT.

It has become the habit of many surgeons, even among those opposed to the drug, to administer chloroform in operations upon children requiring an anesthetic. The ease of administration, the quickness with which the child becomes unconscious, the small quantity of chloroform necessary to procure unconsciousness, the rapidity with which they emerge from under the influence of the drug, the inconsequent after-effect, have all held us to this view. Of the surgeons who have made diseases of the throat their chief study, many no doubt have been worried not infrequently over the dangerous symptoms developed by the child during the administration of chloroform, even if they have not been so unfortunate as to have had a fatal accident. Especially have these alarming symptoms been noted in children afflicted with enlarged tonsils or adenoid vegetations in the vault of the pharynx. The writer has given chloroform to a fair number of children suffering with adenoids, but never without great anxiety and with more than usual caution, so badly do these children act. Probably not one out of ten takes the anesthetic in a manner that might be called normal. The writer has noticed often at the very marked outset, pallor of the face and a rapidly progressing diminishing frequency of the pulse-rate, so much so, indeed, that it sometimes seems to the palpating finger that the heart is never to beat again; and this in spite of the fact that the chloroform is given drop by drop and very slowly. The pupils remain well contracted. If the anesthetic is continued serious symptoms usually develop; if discontinued, as the patient comes from under, the pulse gradually regains its normal rate and the pallor disappears. It may be that this same misfortune will again happen if the drug is readministered. Frequently the operator becomes desperate and, disregarding the old law of never beginning an operation when chloroform is the anesthetic, before the patient is completely under, proceeds with curettement, adding to the danger of the child.

HINKEL, in the *New York Medical Journal* for October 29, reports a death after the operation for adenoids with chloroform as the anesthetic, and has collected from the literature seventeen more cases during the past five years. His case was an anemic boy of six years with a lymphatic constitution. The anesthetic had been given by a skilled man, one who had had experience in just this class of cases and was consequently more than usually careful. The operation had been successfully terminated, "when suddenly the boy gave a few hurried shallow gasps and respiration ceased. The pulse had disappeared and no cardiac impulse could be felt or heard; the pupils were dilated." Everything was done that could be done to restore the heart and respiration, but without success.

The discovery of eighteen authentic fatalities (and who knows how many other deaths have occurred from the same cause, not reported?) is a most valuable contribution to laryngology, showing, as it does, that the administration of chloroform to this class of cases is dangerous and should be entered into with the greatest care and with all appliances for restoration close at hand. Two of the eighteen died before the operation commenced; this, combined with the fact above mentioned, that most of the patients take the drug badly from the start, would seem to lead to the belief that there is some condition of the constitution that makes it intolerant of chloroform vapor even in small doses. HINKEL, who has looked up the literature of the subject very closely, makes the following

statement compiled from the writings of KOLISKO, PALTAUF, and others: "It has been found postmortem in a number of cases of sudden death from slight causes that there was present hypertrophy of the lymphoid tissue throughout the body, including the tonsils, the lymphoid structure at the root of the tongue and the nasopharyngeal adenoids for which we so frequently operate. The thymus gland was persistent and often very large, and the intestinal follices were markedly hypertrophied. In addition there were frequently present a dilated heart not dependent on valvular lesions, and at times a narrowing of the aorta with small size of the peripheral vessels. This condition, which has been called *habitus lymphaticus*, was found among others in a number of cases of death during chloroform administration. People so constituted seem to have little power of resistance to comparatively slight shocks. Nevertheless they may be of robust physique, though usually there are evidences of developmental retardation." All throat specialists are familiar with this very common patient. In addition to the adenoids, there is usually hypertrophy of the faucial tonsil; the glands of the neck are readily palpable; the complexion, though usually exquisite, may be marred by excoriations around the nostrils, the result of chronic nasal discharge; there is frequently an eczematous eruption behind the ears; blepharitis marginalis is by no means uncommon.

Another point of considerable importance has been worked out by HINKEL: that during the last five years, the period covered by his eighteen cases of chloroform death, but six deaths have occurred from the operation itself, and all these as a result of hemorrhage, usually secondary, almost always in patients the subjects of hemophilia.

The practical lesson we must learn from this careful study is that patients of the so-called lymphatic temperament should not as a rule be anesthetized with chloroform for any operation; and that in operations upon the throat this rule becomes imperative.

THE STRUGGLE FOR EXISTENCE BETWEEN THE HUMAN ORGANS.

One of the problems actively discussed in biology is the origin of the atrophies and hypertrophies which mark both evolution and its reverse phase, degeneracy. The fact was early recognized by biologists that man is a compound animal in whom certain structures are endowed with their own nervous system, which is under control of the central nervous system. As has been pointed out by E. S. TALBOT ("Degeneracy: Its Scope, Causes and Effects"), every vertebrate is an aggregate whose internal actions are adapted to counterbalance its external actions. Hence preservation of its movable equilibrium depends upon its development and the proper number of these actions. The movable equilibrium may be ruined when one of these actions is too great or too small, and through deficiency or need of some organic or inorganic cause in its surroundings. Every individual can adapt itself to these changeable influences in two ways: either directly, or by producing new individuals who will take the place of those in whom the equilibrium has been destroyed. Therefore, there exist forces preservative and destructive of the race. Since it is impossible that these two varieties of force should counterbalance each other, it is necessary that the equilibrium should re-establish itself in an orderly way. As there are two preservative forces of every animal group—the impulse of every individual to self-preservation and the impulse to the production of other individuals—these faculties must vary in an inverse ratio; the former must diminish when the second augments. Degeneration constitutes a process of disintegration. Hence if the term "individuation" be applied to all the processes which complete and sustain the life of the individual and that of generation, to those which aid the formation and development of new individuals, individuation and generation are necessarily antagonistic, as HERBERT SPENCER has shown.

Vertebrate embryos, which are all of a common type at their origin, assume, as VON BAER has demonstrated successively, a number of common forms before definitely differentiating. Supernumerary organs exist, as DARESTE points out, in these common forms at one phase of embryonic life. This community of embryonic types and this last fact, explains repetition of teratologic types in vertebrates. This community of origin, moreover, indicates that the higher vertebrate embryo contains in essence the organs and potentialities of all the lower vertebrates, and that, under the influence of heredity or accidental defect, an organ or structure or function constant in a species may be lacking in an individual without the necessity of explaining the immediate effects by distant atavism.

Varying conditions must stimulate these embryologic potentialities at the expense of the later acquired and more typic human organs. The COHNHEIM theory of cancer, for example, is an illustration of the application of this principle. From this results a struggle for existence on the part of organs and structures which, early observed by ARISTOTLE, GOETHE and ST. HILAIRE, was forcibly shown by ROUX two decades ago. ROUX ("Der Kampf der Theile in Organismus"), while also admitting determination by heredity, points out that there are surrounding forces always necessary, not simply the condition of activity by an essential element of the final product. He thus harmonizes the extremes of WEISSMANN and GOETHE by the fact of an internal or physiologic struggle for existence between the organs, the cells and the protoplasmic molecules of the organism. This unsimilarity of parts makes it impossible to establish laws of heredity which shall govern details of function as to the last cell or molecule, as in any army, the commander-in-chief does not give special orders beforehand affecting every

private in the ranks. There must be a possibility of adaptation to surroundings, especially in details which, too, are more easily changed than events on a larger scale.

How is this freedom of organs and of adaptation obtained? The principle that lies back of all development of tissues and organs is over-compensation of what is used, a quality which permits self-regulation and is really a necessary pre-condition of life. Living matter, unlike inorganic matter, presents an external continuity in spite of change of conditions. To effect this, assimilation must always be in excess (over-compensation) for if less than consumption, the organism comes to an end of itself. If equal conditions result, change and nourishment will fail or injurious events will cause destruction. Continuance can only be assured when more is assimilated than is consumed. Fire, for example, assimilates more than it uses, i.e., it always has energy left over to kindle new material. Fire would (like life) become eternal if it did not use up material quicker than other processes can make them. In the same way organisms assimilate more than they can consume, but they do not turn all they use to assimilation; energy remains over by which the process performs something. This work-product controls the excessive assimilation which otherwise would come to an end by not having sufficient material to assimilate. The more complex processes of life are, hence, essentially, as COLIN A. SCOTT remarks (*American Psychological Journal*, 1888), a radiation of assimilation which, although not identical with combustion, is similar to it; the load which it carries favoring its continuity. This radiation, load or work-product becomes directed by natural selection to keep up a supply of food primarily by moving the assimilating mass. Performance of function over and above assimilation is just as much a condition of continuous assimilation as assimilation is of performance. On the other hand, there comes to be an inverse relationship between growth and production (within limits), and capacities result which, although they use up material, do not in themselves increase assimilation. The course of development consists in properly directing this work-product. This so far represents merely a continuous productibility of function in connection with assimilation. But a productibility which is stored up and discharged by an outer stimulus of environment will be much more economic and will give rise to what we find as reflex excitability. When this reflex work-product dominates, according to circumstances, function will sometimes be greater and sometimes less. If, under these conditions, assimilation keeps on continuously, there must sometimes be an overplus, sometimes a balance and sometimes an excessive function, death, and thus elimination. To avoid this last, it is necessary that assimilation should depend upon use or upon a stimulus which use calls forth. From the psychic side stimulus is recognized as hunger.

This kind of process, where stimulus is an indispensable factor, is more special and limited than the more general process of assimilation plus movement etc., but has characteristics which favor it greatly in the struggle for existence. Connected with the most complete self-regulation of functioning is the greatest saving of material. While those parts, according to their use, are strengthened and grow, the unused degenerate, and the material for their substance is saved. This kind of process unites the greatest economy with the highest functioning of the whole but at the cost of the independence of the parts. Senescence becomes thus a result in differentiation in which the parts exist merely on account of the function which they perform for the whole. The senescing organs wither up like State officials after pensioning, and may even descend in this condition from generation to generation, a fact which often allows a fresh start in development. During the course of a lifetime the organism moves from a more general more easily impressible condition to one more perfectly mechanized. Through a long period it becomes through the continuous working of a given stimulus more completely adapted to itself and also more differentiated, and thereby more stable, so that an always increasing opposition is formed to the additional development of new forms and characteristics. This principle, known as the law of economy of growth, governs the relations of the organs to each other, the operation of the principle whereby one structure is sacrificed for the development of another. This, as already stated, was pointed out first by ARISTOTLE, as OSBORN has shown ("From the Greeks to Darwin"). GOETHE first clearly enunciated it in 1807 and it was urged with additional emphasis by ST. HILAIRE in 1818. In a general way, therefore, as DOHRN has shown, this principle holds good of man not only as an organic unit, but as a compound organism.

Degeneracy, according to RAY LANKESTER, is a gradual change of structures by which the organism becomes adapted to less varied and less complex conditions of life. The opposite progressive process of elaboration is a gradual change of structure by which the organism becomes adapted to more varied and complex conditions of existence. In elaboration, there is a new expression of form corresponding to new perfection of work in the animal machine. In degeneracy, there is a suppression of form corresponding to the cessation of work. Elaboration of some one organ may be a necessary accompaniment of degeneracy in all the others. This is very generally the case. Only when the total result of the elaboration of some organs and the degeneracy of others, is such as to leave the whole mass in a lower condition, that is fitted to less complex action and reaction in regard

to its surroundings than is the type, can the individual be regarded as an instance of degeneracy. These degeneracies appear at varying periods, since struggles for existence on the part of the different organs and systems of the body are most ardent during periods of body evolution and involution. During fetal life, during the first dentition, during the second dentition (often as late as the thirteenth year), during puberty and adolescence (14 to 25 years), during the climacteric (40 to 60 years), when uterine involution occurs in woman and prostate involution to man, and finally, during senility (60 years and upward), during all these periods degeneracy may be shown by mental or physical defect, a congenital tendency to which has remained dormant until the period of stress. These defects may be such biochemic alterations (undemonstrable by existing methods) as lead to diminished inhibitory power or other altered function or to secondary pathologic or teratologic change of decidedly demonstrable nature. Organs and structures checked at a certain phase of development may pursue a course of development differing from that indicated in man, but further outlined in other vertebrates.

Are the results of this contest for existence always malign? According to the accepted principle of natural selection this should not be so, since the struggle creates variations of value or not according to the environment.

As HARRIET ALEXANDER points out (*Medicine*, 1896), since degeneracy is a process of evolution, leading to alteration of form because of cessation of inhibitions in certain directions resultant on diminished work, it logically follows that since diminished functionating precedes change of structure, increased functioning must check the change of structure in its biochemic stage. Nay, more, it is evident that the structural elaboration due to degeneracy may be retained while the degenerate structures resume their higher functions. Hence the degenerate race ranks higher in evolution because of the utilization of the beneficial variations due to degeneracy. The influence of this principle is increased by the fact that the majority of the children of degenerates inherit a tendency to degeneracy rather than degeneracy itself. This is also the view of HUXLEY, who expresses the opinion that genius is innate capacity of any kind above the average mental level. From a biologic point of view a genius among men stands in the same position as a "sport" among animals and plants, and is a product of that variability which is the postulate of selection, both natural and artificial. On the general ground that a strong and, therefore, markedly abnormal variety is, *ipse facto*, not likely to be so well in harmony with existing conditions as the normal standard (which has been brought to what it is largely by the operation of those conditions), a large proportion of "genius sports" are likely to come to grief physically and socially, and the intensity of feeling which is one of the conditions of genius, is especially liable to run into insanity. This position of HUXLEY contains the principle which has become of late years so dominant in researches as to the origin of genius. In newspaper science, the theory of the degeneracy origin of genius is credited to NORDAU'S investigations. This newspaper claim for NORDAU (repudiated by himself) is supported even by medical journalists. The editor of the *Medical Record* gives the following rather emphatic endorsement of the newspaper theory as to genius:

"MAX NORDAU'S startling theory that genius is only a form of degeneracy, although not accepted in its entirety, is yet regarded by many as worthy of some consideration." With all his newspaper medical lore, or perhaps because of it, the editor of the *Record* exhibits an astonishing forgetfulness as to the origin and antiquity of the theory of genius being a degeneracy.

This theory is a very old favorite with mediocre intellects. As KIERNAN has shown (*Alienist and Neurologist*, 1892), this doctrine, early in the history of the race, obtained dominance through a natural evolution of arts, sciences and religions from fetichism. Phenomena manifested by fetich priests (of the SHAMAN type) so closely resembled epileptic insanity in its frenzies and visions, that the two states were long regarded as identical, whence the term *morbus sacer*. The supernatural influences, which in current belief underlie epilepsy, were at the outset malign or benign as they were offended or placated. They became benign, and the insane were under special protection of a deity, as in Mussulman countries. Later still, the demon possessions theory gained dominance and at length the demon sank into the disease. Throughout all this evolution the belief in an inherent affinity between insanity and genius persisted. In ARISTOTLE'S day the disease notion was becoming dominant, yet he says that under the influence of head congestion persons sometimes become prophets, sybils, and poets. Thus, MARK, the Syracusan, was a pretty fair poet during a maniac attack, but could not compose when sane. Men illustrious in poetry, arts and statesmanship are often insane like AJAX or misanthropic like BELLEROPHON. Even in a recent epoch similar dispositions are evident in PLATO, SOCRATES, EMPEDOCLES and many others; above all, the poets. According to PLATO "Delirium is by no means evil, but when it comes by gift of the gods a very great credit. In delirium the sybils of DELPHI and DODONA were of great service to Greece, but when of cold blood were of little or no value. Frequently, when the gods afflicted men with epidemics, a sacred delirium inspired some men with a remedy for these. The muses excite some souls to delirium, to glory with poetry heroes, or to instruct future generations."

DEMOCRITUS, whose biologic researches are well-

known, was also of opinion that genius was associated with insanity when manifested in poetry. HORACE compressed the sentiment of his day, as to genius, into lines later paraphrased by DRYDEN:

> Great wit to madness nearly is allied,
> And thin partitions do their bounds divide.

This Horatian doctrine long had wide-spread vogue among Philistinish mediocrities (from envy of any superiority) and among morally defective geniuses from a desire to excuse faults and vices.

The superficial resemblances which the misoneism of mediocrity found to exist between the emotional enthusiasm of the intellectual stir of the poet and the opposite state of hypomaniac emotional exaltation, as well as that seeming to exist between the rapid finely graded logic of the sage and disjointed saltatorial reasoning of the paranoiac, may have helped to fix more strongly the doctrine on the minds of these who accepted it. SENECA expresses the opinion that no genius exists without an admixture of madness. MONTAIGNE and BURTON (the "Anatomy of Melancholy") advance similar views. SWIFT seriously makes, with grim irony ("Tale of a Tub:" dissertation on madness), the proposal that the world shall choose its geniuses from Bedlam. PASCAL accepts HORACE'S view anent the kinship of genius and insanity. According to FELIX PLATER ("Observations in Hom. Affect., 1641), madness and genius are very near, an opinion which was later reiterated by DIDEROT ("Dictionnaire Encyclopedique"). In the late eighteentn and early nineteenth century a certain amount of reaction occurred against the doctrine. TISSOT, the great psychologist, one of the earliest writers to point out the effect of the psychic disturbances from fear and shock in the production of *delirium acutum nervosum*, as the older surgeons called post-operative insanity, wrote a work ("Maladies des Hommes de Lettres," 1796) intended to prove that most of the afflictions of literary genius were occupation disorders, not inherited degeneracies.

With the impetus given the evolution doctrine during the first half of the nineteenth century, the degeneracy phase of genius was again strongly urged. Mr. MADDEN began the work "Infirmities of Genius" (1833) later supplemented by the magnificent epoch-making treatise of MOREAU DE TOURS, "La Psychologic Morbide" (1859) on the subject. In many respects this work, considered from the standpoint of logical analysis and arrangement of facts, surpasses most later treatises on the subject. It certainly compares favorably with MAUDSLEY'S vaticinations on genius, with the researches of J. A. SCHILLING (*Psychiatrisches Briefe*, 1863), with the work of HAGEN ("Verwandschaft des Genie mit dem Irsinn," 1877), with JURGEN-MEYERS' researches (*Zeitschrift f. Tolker-Psychologie*, 1879), with LOMBROSO'S work ("L'Uomo de Genie," 1883), with that of RADESTOCK ("Genie und Wahnsinn," 1884), with that of TEBALDI (Ragione e Pazzia," 1884), with the researches of TARNOWSKI and TCHUKINOVO, who translated into Russian, with additions, LOMBROSO'S work in 1885, and with the work of NISBET ("Insanity of Genius," 1892). NORDAU, as he admits, merely popularized pessimistically the views LOMBROSO expanded from MOREAU DE TOURS, who had a quarter of a century previously characterized genius as a neurosis. According to LOMBROSO it is a degenerative epileptoid neurosis.

Notwithstanding the *Medical Record's* learned opinion, the degeneracy theory of genius has not as yet reached that stage where it fulfills scientific requirements, since it not only does not as yet explain all the facts, but it fails to exclude all other explanations.

However, not even those who, like KIERNAN, claim that where neuropathy and genius coexist (*Alienist and Neurologist*, 1887) the genius is an expression of healthy atavism, will deny that the struggle for existence between organs and structures, already outlined, may produce variations which, when the organism secures the balance between its warring structures, must elevate the race in the scale of evolution. The principle thus enunciated lights up, as HARRIET ALEXANDER remarks, the gloom of the ordinary pessimistic view of degeneracy with a well-defined hope that the functionally defective neurons of the degenerate may be trained

> Till within
> The twilight mazes of his brain
> (Like embryos within the womb)
> Thought pushes feelers through the gloom.

It also points out optimistic possibilities of that future when man shall have learned to adjust the struggle for existence between his structures for the greatest benefit of the organism as a whole.

CORRESPONDENCE.

The Commission Evil.

NEW YORK, Nov. 14, 1898.

To the Editor:—In the JOURNAL of Nov. 13, 1898, I find an editorial under the caption of "The Commission Evil" which reads almost like a slander upon the profession, and which leads me to ask if the editor actually has knowledge of specific instances in which a commission or rebate has been paid by the general practitioner to the specialist?

My own work is almost wholly with physicians, and among the hundreds with whom I come in contact not one has ever intimated that he would like to have a commission or rebate. Sometimes when I have done work for a poor patient whose friends have collected a small fee for me and none at all for the family physician, who has much work to do for the patient, I have insisted that the physician should take a part of the fee, and even in such cases have usually found him unwilling to take any part thereof. Possibly the report that specialists claim commissions has come from some one who feared that he was not getting his share of work because he did not give commissions, but the acquaintances of such a man could probably in

form him of the real reason why he had failed to engage the confidence of physicians. Not long ago a truss-maker offered a 10 per cent. commission on all cases referred to him, and all my cases for trusses have since then been directed to go elsewhere. Every responsible physician knows how patients trust him and he selects with great care the specialist who is to do work for any of his clientèle. He must be instinctively repelled by the idea of receiving a commission for doing the right thing by a patient who has put confidence in him.

Physicians in my circle of acquaintance present two well-marked attitudes. In one class the physician persuades me to do work for small fees, hoping thereby to gain personal prestige with the patient. In the other class the physician says, "I want to be fair to you and to my patient. My patient can not pay you $5000 for his operation without depriving himself a good deal, but he can pay you $2500. A third class in which the physician asks for or would accept a commission is not met with in my practice at all, and I believe that my practice is representative, and that other surgeons who are held to be responsible men will give precisely the same testimony.

ROBERT T. MORRIS, M.D.

"A Physiologic Question of Practical Importance."

OWATONNA, MINN., Nov. 18, 1898.

To the Editor:—I was interested in your editorial in the JOURNAL of November 12, under the above caption, but wish to correct an erroneous impression you have conveyed to your readers in it.

The fact is, that the official investigation in the Tryon case showed that the Admiral was so thoroughly under the influence of alcoholic intoxicants as to render him incompetent for the performance of almost any intelligent function.

There is but little doubt that many of the cases to which you refer originate in the same manner, though perhaps not from this identical cause. It is well known that there are various drugs which produce such results, and there is but little doubt that the excessive use of tea, coffee and tobacco may be responsible. However, the fact still remains that we often do have the phenomena to which you refer resulting from a perversion of some one or more of the cerebral or nervous functions. I think the trouble is fully as likely to be in some of the special senses as anywhere, though doubtless it is often located in some of the higher cerebral centers which connect us with our environment. It is certainly a fascinating study, though one in which the omnipresent microbe may for once probably be eliminated, and one which should yield profitable results to him who follows it. Very truly yours,

THEO. L. HATCH, M.D.

Vital Statistics of the War.

CAMDEN, N. J., Nov. 16, 1898.

To the Editor:—Dr. Charles Smart of the U. S. A., in a letter directed to you, of the date of October 22, complains of an editorial which appeared in the *Philadelphia Medical Journal* relative to the mortality in the Spanish war, and causes of the mortality.

What he says is all very well for the most part; but will he explain why so many soldiers not exposed to the hardships of war, but quartered in a country rich and resourceful in every way, died of disease. When we consider that these same soldiers had all undergone strict physical examination and been pronounced of excellent resisting power, the mortality among them seems to indicate gross incapacity somewhere.

Suppose that during the Civil War proportionately as large a number of soldiers had been isolated from the scene of actual warfare and that the same percentage of deaths had occurred among them, would not the mortality have seemed frightful?

Respectfully yours, J. F. WALSH, M.D.

PUBLIC HEALTH.

The National Quarantine Convention at Memphis. Pursuant to call, the National quarantine convention assembled in Germania Hall, Memphis, Tenn., November 17. Chairman J. S. Menken of the committee on organization called the meeting to order. After addresses of welcome by Mayor J. J. Williams and Mr. Menken, Gen. Luke E. Wright was unanimously chosen as permanent chairman. He spoke of the objects of the convention and the benefit to be derived from National control of quarantine matters. The organization was completed by the election of Mr. Phil. A. Rusk of Senatobia, Miss., as secretary, and Mr. Fred Orgill of Memphis as assistant secretary. The balance of the morning session was consumed in the discussion regarding the equitable representation of the States and in the completion of the different committees. The afternoon session was devoted to the reading of various resolutions presented for consideration. By order they were respectively referred to the committee on resolutions without debate.

At the evening session the first paper was by Dr. John B. Hamilton of Chicago. He prefaced his remarks by stating that it was fortunate for this convention to be held in Memphis, because it was twenty years ago in the throes of agony from a fever epidemic, while it was, on account of its present excellent sanitary conditions, free from this and other diseases and therefore an object lesson to show the results of applied sanitary science.

He passed the origin of yellow fever with the statement that it was exotic, a living organism, but whether vegetable or animal it mattered not. As the fever organism traveled only by the ordinary vehicles of conveyance, its spread could be stopped by stopping these vehicles, as was done during the Civil War by blockade. Its spread from Brownsville, Texas, was prevented during 1883, while without these precautions it spread greatly in Mexico. In the same year an epidemic of fever was prevented from spreading from Warrington to Pensacola, Fla., only two miles distant. Proper measures also prevented its spread from Decatur, Ala., in 1888. Mentioning other similar instances he said that whenever commerce had been bound and epidemics had spread since 1891 it was due to maladministration, in failure to apply rules of sanitary science.

In regard to panic and its prevention, the only way he knew of preventing panic was to teach the people that the death-rate from yellow fever had been greatly reduced; that tuberculosis annually destroyed one hundred times as many lives; and that typhoid fever had a higher and a greater death-rate than yellow fever. With proper sanitation and isolation of the first case, he said, there was little chance for it to spread in cities.

Today, more than at any previous period in the history of this country, America is in a position to press the matter of sanitation in cities not formerly under our control, from which have emanated, for the last two centuries, a steady stream of death dealing microbes. The duty of the government is clear, that, at whatever cost, the foul plague spot which the providence of God has placed in our hands, shall be made clean and healthful. These beautiful isles of the sea, so favorably situated by nature, should be purged of contamination.

Already we see the admirable result of the cleansing of Santiago, and in that city, for the last seventy days, there has not been a single case of yellow fever, a condition which that city has not been able to report for a hundred years, so far as known. Our sister republic of Mexico, which now has an excellent national board of health, has, in view of the probable improvements about to take place in the islands of Cuba and Porto Rico, undertaken the sanitary regeneration of Vera Cruz, hitherto almost continuously infected with yellow fever for a period of over three hundred years. Shall we not take into consideration this bright outlook as to exemption from exotics, in discussing plans for the sanitary future of the United States?

I believe all have arrived at the conclusion that the present condition of things in this country is unsatisfactory, and that the situation has narrowed down to the presentation of two bills now pending in congress—one known as the Caffery Bill, and the other the Spooner Bill, which has been adopted by the AMERICAN MEDICAL ASSOCIATION and the American Public Health Association. The Caffery Bill, which has incorporated many of the features of the law of 1890, which was formerly superseded by the law of 1893, but in addition contains drastic clauses singularly inappropriate for the purposes of a free country, has been passed upon adversely by the sanitary bodies of this country, but its advo-

cates continue to contemptuously flaunt it in the faces and eyes of all of a public that wants none of it. The central idea of the Caffery Bill is force, power and control, not co-operation. Besides that it is the narrow one idea of quarantine, no great system of general hygiene is provided. On the other hand, contrast the broad, wise provisions of the Spooner Bill, framed after seven years of labor by professional committees of the American Medical and American Public Health Associations. The New York Board of Trade and Transportation, through a quarantine committee, spent many months by correspondence, by hearings and otherwise, in endeavoring to arrive at a conclusion in regard to this matter, and their recommendation is in favor of "legislation which shall organize in the United States a national system of coast and interstate disinfection."

"We use the word 'disinfection' as distinguished from 'quarantine,'" said Mr. Frank S. Gardiner, secretary of the board, when questioned, "because we are led to believe that with the adoption of a proper and general system of sanitation and disinfection throughout the country, guided and controlled by one general head in thorough harmony and sympathy with every local State board, every such board can be brought in touch and co-operation with every other local and State board, and what we have hitherto known as quarantine will practically disappear as being unnecessary, barbarous and obsolete."

The question before this convention is, will you recommend to congress the adoption of the AMERICAN MEDICAL ASSOCIATION Bill, providing for general sanitation, as well as quarantine, which provides for full co-operation with every State Board of Health, and through this full local representation with its executive officer elected by this representative council, or will you rather choose the Caffery Bill, devoted to the single subject of quarantine, more suitable for the empire of the czar or of the sultan than that of free America? I can foreshadow your choice.

Dr. S. D. Robbins, acting asst.-surgeon, M.H.S., Vicksburg, Miss., in the paper which he read, strongly advocated the annexation of Cuba as probably the best way to deal with the question. He thought the government ought to take charge of Cuba and thoroughly renovate the island.

Dr. F. M. Rogers read a paper in which he traced the history of the fever from early times on down to the present time, and he went far into the details of a correct diagnosis and treatment of the disease. He concluded by advocating national control of quarantine matters.

The convention then adjourned until 9 o'clock November 17.

The second day's session was commenced with the reading of the paper of Dr. H. B. Horlbeck.

I unhesitatingly and without doubt express the conviction that the national laws as to quarantine that may be enacted by the Congress of the United States should be placed for execution in the hands of a separate and distinct representative bureau of health, to be organized at the seat of government at Washington.

Laws and regulations and rules framed under this organization should have the hearty co-operation of the people of the different States.

The laws of health in all the communities of these United States are practically expected to be enforced under the guidance of the members of the medical profession of such places.

The matter of the delegation of the conduct of national sanitation, quarantine and hygiene has engaged the close attention of the medical fraternity for a number of years in the recent past, culminating about eight years since in a distinct and decided act by the AMERICAN MEDICAL ASOCIATION of the United States.

The AMERICAN MEDICAL ASSOCIATION possesses a membership of nearly ten thousand medical men, a roll of membership characterized by aspirations of the noblest endeavors that actuate mankind, and fulfilled by untiring and unselfish devotion. The committee of the AMERICAN MEDICAL ASSOCIATION appointed by them for this purpose, has been carrying out the wishes of that body in using every possible effort to have Congress enact a law creating a commission for the protection of the general health of the United States. The American Public Health Association, comprised of the members whose daily occupation is the practical solving of questions of hygiene in their respective States and municipalities, has spoken with no uncertain method in confirming the action of the AMERICAN MEDICAL ASSOCIATION. Thus we have the largest distinct sanitary body in the world and the largest medical association (far outnumbering any other organization of a similar character) in this country, who have given serious thought to these vital and all-absorbing questions, in an overwhelming majority expressing their judgment that all matters pertaining to the national issues of health should be placed in the control of a representative commission, who shall organize a working bureau or department of health—a bureau in which every State should be represented.

These matters have been before the country for many years—the present systems have been unsatisfactory in their results.

Year after year, not only yellow fever but other contagious or infectious diseases are spread abroad between and among our States. The Marine-Hospital Service should confine its work and labors to the welfare of the sick sailors or seamen of the merchant marine of the United States. It was never entertained when this service was organized that the internal or external quarantine should be placed under its control. Nor is it proper that it should remain there any longer than a proper representative bureau can be organized for the purpose.

It is my conviction that as far as is possible the care of the health interests of each municipality and State should be under their respective boards of health, and it is my further conviction that all interstate matters of health quarantine, sanitation and hygiene should be under the control of a national bureau organized as above indicated.

The powers now granted by the quarantine act of Congress, passed and approved Feb. 15, 1893, are today most full and sweeping. With a strong, well-equipped and vigorous administration they would seem entirely sufficient. This law gives to the President the fullest powers possible to be granted, and no other power, marine hospital or national board should have more. This law gives power to the Secretary of the Treasury (that is, practically, the Marine-Hospital Service) to make additional rules and regulations beyond the rules and regulations of States and municipalities that may be necessary, and on the failure of these States and municipalities to execute the additional rules and regulations, to carry them out, to enforce them. Why should an additional law be enacted, giving supreme and arbitrary power to the Marine-Hospital Service to force any and every community to carry out their mandates as to certification of persons or merchandise, under penalty of the hated and degrading stripe and ruinous penalty? When dealing with the organized municipalities of the United States, education and not force should be the compelling power. Men resort to extreme measures of the shotgun under great pressure of concealed peril. An enlightened and able organization, showing capacity for protection, would cause the rude interference of the shotgun to vanish as the melting snowflake in the flowing river.

The opportunity presents itself to this convention, composed of enlightened citizens representing not only the legally constituted guardians of the public health, but also the representatives of the various interests of many communities and States, to place upon record their demand upon Congress that they should organize a national bureau of health—to whom not alone the matters of national quarantine (which at best is an arbitrary necessity, only to be used under extreme occasion) should be given, but to whom the immense and all pervading questions affecting every home and homestead in the land should be referred for instruction and assistance when required as to betterment.

Scarlet fever, diphtheria, typhoid fever and the great white plague, consumption, year by year and month by month and day by day claim their tens and hundreds of thousands of victims. Of many, we have mentioned these few preventable diseases, which would be looked on with horror except for their constant and daily presence.

The duty and province of a bureau of health would be to enlighten the nation in all its walks, among the mighty and among the lowly; to prevent these diseases; to spread information by widely-circulated publications of the dangers from improper food and drink and surroundings; to gather information from all progressive and enlightened foreign lands, and to verify and develop all possible knowledge and give it to the country; to organize a biologic laboratory, where the problems of the dangers to life and well-being and happiness may be studied and the results made known, to collect vital statistics; to learn what places are unhealthy, and to say why they are not suitable for human habitation; to keep disease out of the country, and when it passes the confines to hinder its progress.

What an example England gives us! Quarantine is hardly known, but enlightened sanitation is practiced. Disease is prevented.

There is not a home in these States that can not be bettered, however well appointed it may be, and knowledge and information should be continually furnished for the guidance of the people by weekly bulletins that should be widely distributed.

For these and many other duties a national bureau of health should be established and equipped and maintained.

When the great people of these United States shall be educated as to their own duties, and it shall be made plain to them that their very lives depend on the observance of proper rules for their guidance and protection, there will be no necessity for such coercive and drastic penalties as have been contemplated. The bureau of health should have control of all interstate and national questions of health matters, and should be cooperative and always be ready to render assistance in information or material.

This convention, should it earnestly, with no uncertain cadence, give its support to such an organization as a national department of health, will not have been without avail in the eternal progress of our advancing civilization made possible under the benign and never-to-be dimmed Star of Bethlehem.

Dr. Saunders deprecated the idea of centralization of power as being contrary to the spirit of the institutions of this country. He advocated a broad system of public health, rooted in the people from whom its support should be drawn.

At the close of Dr. Saunders' address the report of the committee on resolutions was called for and presented by Chairman G. D. Shands, who prefaced the report by stating that it had been unanimously adopted by the committee, after mature reflection and deliberation. The written report was read as follows:

The committee on resolutions, after careful consideration of the many valuable resolutions offered by the various members of the convention, have decided upon the following as embodying the ideas expressed in the majority of the said resolutions:

Therefore, That for the purpose of protecting and improving the general health of the people of the United States, co-ordinating and harmonizing the action of the State and National sanitary authorities; framing regulations for the treatment of infected vessels and material at all infected or suspected foreign ports of shipment; preventing unnecessary interference with commerce, the United States mail, or through traffic by land or water, and for adopting a uniform system of quarantine for all ports in this country; be it

Resolved, That there be established on a broad and comprehensive basis a National Bureau of Public Health in the Department of the Treasury of the United States, that the administration of *all* the public health functions now exercised by authority of the United States be placed in the hands of this Bureau.

2. That the sanitary authorities and commercial interests of the several States of the Union be brought into immediate relations with the Bureau and be given a due share in the power and responsibilities of the central board through the agency of an advisory council consisting of one member from each State, to be appointed by the authorities of the several States.

After the reading of the report its adoption was before the House for debate. Dr. Maury, of the Tennessee delegation, took the floor. As there was objection to the immediate passage of the resolution, an adjournment was taken until 3 P.M.

An executive committee was appointed, as follows, and they were instructed to use every effort to secure the passage of a law in accordance with the resolutions. The committee will themselves agree on a bill which meets the views of the Convention as thus expressed: Gen. Luke E. Wright of Tennessee, Dr. Ruhart of Maryland, Fred Orgill of Memphis, Dr. U. O. B. Wingate of Wisconsin, Dr. W. B. Horlbeck of South Carolina, W. H. Dwyer of New Orleans, J. T. Harahan of Illinois, and Dr. Samuel Durgin of Massachusetts.

At the opening of the afternoon session many amendments were offered, but were promptly voted down, and the original resolution was passed by an overwhelming majority. After the passage of the resolution and vote of thanks to the local committee, the convention adjourned.

The Plague in Russian Turkestan.—The public has been much alarmed at the few cases of plague in Vienna, but all danger seems to be over from this source. There is more to be feared, perhaps, from an epidemic of a disease supposed to be the plague, reported by the governor of Samarkand at the village of Kishlak, Ansord. The strictest measures were taken at once to prevent the spread of the disease; the chief of the Plague Bureau, Prince Alexander von Oldenburg, hastened to the spot; the village was disinfected, clothes burnt, etc., and a cordon of inhabitants of neighboring towns drawn around the place.

A New Institute of Hygiene.—The South Australian Institute of Hygiene and Bacteriology has been brought into active operation within the last two months. Its objects, among others, are to afford facilities for the study of bacteriology and hygiene, the encouragement of original research, the giving of lectures on sanitary subjects to sanitary inspectors, nurses and others. A very moderate scale of fees for bacteriologic examinations has been adopted. Dr. Borthwick, medical officer of health, Kensington and Norwood, has, we understand, been very largely instrumental in founding the Institute, of which he is the honorary general secretary. We trust that the Institute will enjoy a successful and useful career.

Sanitary Operations at Santiago.—Gen. Wood is indefatigable, in sun and rain alike. The result of his labors is apparent in every branch of the service—civil and military. The patients are reaping the result in better attendance and improved food and cooking. People who have lived here a lifetime are unable to understand the extraordinarily low death-rate, averaging for October, up to date, ten a day. During the same period of last year the deaths averaged 183 a day. The 300 prisoners in Santiago prison will in future be made to work on building roads for the city. The rock will be hauled over the railroad from the Songo quarries. It will be delivered at the rate of forty cents a ton, and the railroad officials have offered to deliver 500 tons of rock free as their share of the work of improving the city.—*New York World.*

Typhoid Fever the Scourge of the Armies.—The lessons of some of our recent wars ought to be instructive to those who have the responsibility of placing a number of armed citizens in the field. Hitherto the lessons of war have been disregarded, though the teachings have been most emphatic. Disease kills more than the sword. This appears to be the inevitable course of wars. It was written in large letters in the Franco-Prussian War, and more fearfully still in the Crimean War. Since then in the Spanish-American War the ravages of yellow fever have been appalling, and now we learn that a telegram from Alexandria states that the men who have returned from the Nile continue to die like flies, from enteric fever, contracted possibly through the use of tinned beef, and certainly aggravated by immoderate indulgence in cheap, nasty spirits at fifteenpence a bottle, the men having accumulated money in their pockets. The return states that every bed in the great hospital at Raseltin is occupied, besides which dozens of deaths occur weekly, and it is believed that ten per hundred of the British troops on the Nile are already affected. The disease is, moreover, following the troops into Crete. When tinned beef is fresh it is all right, but big tins rapidly spoil before the contents are consumed. The mortality during the whole campaign is probably less than the subsequent deaths from enteric fever.—*The Scalpel*, October.

Defective Hospital Arrangements in the Soudan.—The approaching home-coming of many hundred sick soldiers from the Soudan has revealed grave defects in the military hospital organization here. The fact is that at the present moment all these hospitals are already overcrowded, and the only way in which room can be made for the poor fellows now returning from the East is by driving out an equal number of men long before they are honestly cured. A few more weeks, or even days, of treatment would have saved such sufferers as future defenders of their country; but, as a matter of fact, the authorities, who expel still ailing men for want of room, satisfy their own consciences by labeling them invalids, and clearing them out of the service altogether. It is difficult to overestimate the number of soldiers England loses each year by this almost inhuman economy; and if the critics who have been lifting up their hands in holy horror at the shortcomings of our war surgery will now but look at home, they will find conditions—absolutely inadequate in a time of comparative peace—which would constitute the gravest scandal in a time of war. But the modern average Britisher, even the jingo, says in his heart, "There will be no war," and keeps his very hospitals on a scanty peace footing.—*The Outlook.*

The Seasons at Manila.—The seasons at Manila are described by the Spaniards as six months of mud, six months of dust and six months of everything. There is much confusion in the public mind just now as to the question of the health of

North American troops during a temporary sojourn in the Philippines, and also as to the larger question of possible acclimatization of our people in those islands, in case of permanent occupation. No definite answers can be given to these two questions, but in their consideration three things may well be borne in mind: 1. By means of strict observance of hygienic principles, the death-rate among foreigners in a tropic country can be very much reduced. This has been nowhere shown except in the case of the British troops in India and of the French troops in Cochin-China. 2. The great majority of the best authorities are agreed that complete acclimatization of Europeans—and hence, we may add, of North Americans—in the tropics is impossible. By exercising the greatest care, they may live in tropic countries, but, as has been well said by a recent writer, to tolerate a climate is one thing; to be independent of it is quite another. 3. The Anglo Saxons are universally acknowledged to be the least fitted, the Mediterranean nations the best fitted, to colonize in the tropics.—*Science.*

Pulmonary Tuberculosis.—Otis (*Am. Jour. of the Med. Sci.*, November) believes it problematic whether we shall ever be able to cure any large number of these cases by antitubercle serum, "for when the disease is once thoroughly established the infection becomes a mixed one, and various other microorganisms are brought into play, and the whole system becomes involved." He considers prevention the most hopeful outlook—prevention by eliminating the bacillus and by establishing immunity to it through a normal standard of health. Properly conducted, compulsory registration of the sufferers need not work great hardship to the consumptives or their friends, but would be less necessary if physicians could be depended on to see that proper precautions were taken as to the disposal of the sputum and disinfection. Where preventive and disinfectant measures are difficult or impossible of execution, among the consumptive poor, especial hospitals should be provided. He gives the following instructions concerning the disinfection of a room that has been occupied by a consumptive: "Carpets, curtains and bedcoverings should be exposed to superheated steam under high pressure, or where facilities for this do not exist, they, with all stuffed furniture, shough be thoroughly shaken and brushed, and exposed to the open air and sunlight for several hours. The floor and walls of the room should be rubbed with new bread, followed by the application of a 1 per cent. solution of chlorid of lime, or a corrosive sublimate solution (1 to 500); ceilings should be thoroughly dusted and white washed. Every corner wherever dust is likely to lodge should be carefully cleaned. The windows should be left open for twenty-four hours." Further, in dispensaries, etc., circulars with plain directions as to the avoidance of tuberculosis should be given each patient, and to the tuberculous ones, in addition, rules for disposing of the sputum.

Local Infiltration in Infections.—E. Centanni of Bologna announces, as the result of extensive study of the serotherapy of pneumonia (rabbits), that Behring's methods are ineffectual in this disease; the products are rarely active, and too uncertain to be depended upon when the disease is actively developing. But he found that he was able to extract from the cultures outside the body, harmless, rapid and concentrated vaccines which produced favorable results even when the disease was actively developing. He also found that this effect was due to the participation of the organism which they induced, and finally established the important fact that the organism possesses an extremely powerful immunizer in the local infiltration, which acts at the same time on the germs and on the products of their action on the tissues. Reabsorption of this infiltration or inoculation with the small amount of .5 to .2 centigram, confers upon the rabbit at one stroke, without any other preparation, a serum that arrests the pneumonic infection even at the moment of its highest activity, with a natural crisis. The action of the antipneumonia serum combined with the local infiltration proved so satisfactory that he extended his research to diphtheria. He found that while the infiltrate is powerless in this disease to prevent the action of the toxins upon the tissues, yet it succeeds in paralyzing the secondary products, and thus exerts its curative power at a period of the disease when the specific serum has ceased to be effective. He divides the infection into two stages: 1, the alterations produced in the tissues by the direct action of the germs or their toxins; 2, the products that are developed secondarily in the altered tissues. Immunity therefore must depend upon two factors: one to arrest the development of the primary germs and render their toxins harmless to the tissues, and another to promote the limitation and harmless reabsorption of the altered tissues at the local focus. The first immunizing factor is to be derived from cultures, either directly or by transformation, but the second factor is evolved by the elements of the body at the point of local reaction, and the moment to obtain it for use on others is when the infiltration is being absorbed into the circulation. The *Gazzeta d. Osp.*, xix, No. 103, contains the detailed report of his investigations.

A Decline in Birth-Rate.—At the Birmingham Congress of the British Sanitary Institute in September, Dr. Dawson Williams read a paper on the subject of "Decline in the Birth rate of England and Wales," and said that when the census was taken in 1891 it was discovered that we had been making an overestimation of our population in England and Wales, and that whereas the estimate expected an increase since 1881 of, in round numbers, three and three-quarter millions, yet the actual increase, as ascertained by enumeration, was only just over three millions. The growth of the population was determined by two factors—the balance between births and deaths, and the balance between immigration and emigration. The decline in our rate of growth has been due to a disturbance of both these balances. The births were 290,000 below expectation; emigration was 412,000 above expectations. The death-rate was lower, so that in fact, the natural increase on the balance of births and deaths ought to have been larger. He commented upon the diminished birth-rate, and ascribed it to a progressive decrease in the number of children born to married English and Welsh women, and thought this might be due to the fact that the average age at which women married was now somewhat later than formerly. It was a rather curious fact that the proportion of bachelors in a given number of males decreased steadily, not only during early adult life and maturity, but afterward also. The registrar-general concluded that "married life must in itself be more favorable to longevity than the condition of celibacy." Death or marriage appeared to be the alternative. The last census showed that both the urban and the rural population had increased, though not in the ratio expected; but the increase had been much less in the latter than in the former. In certain counties in which agriculture was the main industry, the rural population had actually declined. There were more infants born in towns than in the country in proportion to the population, but the infant mortality in towns was so much higher than in the country that the town excess of births failed to maintain an excess in proportion to the total population. The great improvements brought about by public health legislation had affected persons in adolescence and in early maturity. The decrease in the birth-rate would appear to be progressive, and by far the greater proportion of deaths in infancy were preventable.—*The Scalpel*, October.

Sanitation of an Oriental City.—The *New York Times* describes the radical measures adopted by the Japanese in Formosa, for the reclamation of a filth saturated city. Japan has, in the Island of Formosa, a possession that duplicates, on a small

ble, many of the administrative, economic and political prob-ms which Cuba presents to her would-be regenerators, Amer-an and native. In Formosa, as in Cuba, the centers of pop-ation have for centuries been breeding-places of pestilence, gregations of people rather than cities, and unprovided with en the rudiments of a sanitary system. On assuming con-ol of the island, the Japanese first turned their attention, turally, to the remedying of conditions from which their n soldiers and officials were sure to suffer severely. This sk, everywhere difficult, they seem to have found impossible accomplishment in at least one instance, for they have just cided that it will be cheaper and easier to remove the inhab-ants of Teukcham, an important seat of trade, to a new site an it would be to make the present one even moderately althful. So they have ordered 40,000 people to prepare for mediate removal from the infected and swampy ground on hich the town now stands, and to take up their residence on hillside several miles away. Here streets have been laid out e, but better than, the old town, and to every property owner ere has been assigned a plot of land corresponding in position d size with that which he formerly occupied. Sewers, rail-ads, sidewalks, public buildings, water-works and many her improvements have been provided at Government ex-ense, and, with further assistance, which the people will ceive, it is expected that within twelve months the transfer ill have been effected with an amount of individual loss and ardship not worth considering in comparison with the bene-ts secured. A Formosan town is a very different thing from Cuban city like Havana or Santiago, and what is practic-ble enough in the one case could hardly be attempted in the her, but there is none the less a valuable suggestion in this apanese "short cut" to health and safety. Cuba has many od harbors, occupied now by only small and easily handled llages. By judicious selection among these it would not be mpossible gradually to attract population, especially new-omers, and so start even with the microbes and bacteria.

SOCIETY NEWS.

Cincinnati Academy.—At the regular meeting of the Academy of Medicine, November 14, Dr. C. D. Palmer read a paper en-titled "What is the Proper Field of Salpingo-oöphorectomy?"

Society for Original Research.—At the regular meeting, held in Cincinnati, November 10, the program was: Two brain tumors, by Dr. F. W. Langdon; histologic specimens, by Drs. Freiberg and Rowe; "The Anatomic Basis of Neuralgia of the Temporal Bone," by Dr. Robert Sattler.

American Humane Society.—At a meeting of the Joint Com-mittee on Vivisection of scientific societies of Washington, D. C., November 12, the following resolution was passed:

Resolved, That the Secretary be authorized to call the at-tention of the prominent medical and scientific journals of the country to the importance of the meeting of the American Humane Society to be held in this city in December proximo, and to request that editorial notice be taken of the danger that the influence likely to be exerted at that meeting may cause the Vivisection Bill now pending in the Senate to be called up and passed.

It is also requested that our readers write to their respective senators and representatives in regard to the matter.

Washington Medical Society.—At the meeting of the society held November 16, Dr. Shands presented skiagraphs illustrat-ing the value of X-rays in the treatment of fractures of the long bones. He showed a number of cases of deformity from old fractures which he had subsequently cured by wiring. One skiagraph showed the entire pelvis and both legs. Dr. Carr reported a case of ruptured spleen. The case was that of a child 10 years of age, who had been kicked by a mule and brought to the Emergency Hospital for treatment. On the second day he opened the abdomen, found a ruptured spleen, which he removed, the child making an uneventful recovery. Dr. Galzebrook presented a dentigerous cyst which he removed at an autopsy; the growth was about the size of a small apple and contained two well-formed teeth; he presented two kid-neys, each of which showed an anomalous arterial supply, each having three renal arteries. The ureter entered the pelvis of the kidney by three or four openings in each specimen. He also presented a tubercular abscess of the lung with the abscess covered with hard, chalky deposit. The pleura was also studded with chalky deposits.

Washington Medical Association.—An adjourned meeting of the Medical Association of the District of Columbia was held November 15, to receive the report from the Standing Committee on Hospital Dispensary Regulation. The committee reported that the staffs of the following institutions had presented satisfactory proofs that they were enforcing the recent regulation of the association regulating the admission of free patients: Central Dispensary and Emergency Hospital, Dorothea Dix Dispensary, Eastern Dispensary, Woman's Dispen-pensary, Children's Hospital, Columbian Hospital, Garfield Memorial Hospital, Lutheran Eye, Ear and Throat Dispensary South Washington Dispensary, Columbian and Georgetown University Hospitals. The committee said: "We find that the Dorothea Dix Dispensary has on its attending staff others than members of the association, but those who are members expressed their determination to comply with the regulations." In the opinion of the committee the system in vogue to a certain extent, in the Providence Hospital, by which the resident physician, who is not a member of the Association, but renders service to private patients in pay-rooms, is reprehensible, and calculated to deprive members of the attending staff and the profession at large of proper remuneration for their services. The committee was instructed to report the names of physicians connected with hospitals of the District who are not members of the association, and to recommend a plan for correcting the abuse cited in their report.

NECROLOGY.

PHILANDER VIRGIL BENSON, M.D., Baltimore, Md., November 10, aged 60 years.——Herman A. Borger, M.D., Chicago, November 18, aged 38 years.——C. J. Heckert, M.D., Harrisburg, Pa., November 13, aged 50 years.——H. S. Howell, M.D., Kansas City, Mo., November 13, aged 40 years.——James M. Smith, M.D., Cheswold, Del., November 12, aged 62 years.

JAMES D. MONCURE, M.D., superintendent of the Eastern State Hospital, died at Williamsburg, Va., November 9. The Doctor was born in 1842 and began his study of medicine in Heidelberg University, Germany, after being a student at Bernhardt, Austraeli, Meindirgen, Germany, and in College Rollin, Paris. After the Civil War he was graduated from the University of Maryland and, in 1884, was elected superintend ent of the above asylum.

JOSEPH UNDERWOOD HALL, M.D., Jefferson, 1859, died at his home in San Jose, Cal., November 14, aged 85 years. He was a native of Kentucky, and during the Civil War had charge of the Union Hospital in Glasgow, Ky.

B. ABBOTT LINDSAY, M.D., College of Physicians and Surgeons, New York, 1881, died at his residence in New York City, November 13. He was born in Lancaster, N. H., forty-two years ago.

CHARLES C. EDWARDS, M.D., Jefferson, 1875, born in Gibson, Pa., seventy-three years ago, died at his home in Bingham, N. Y., November 16.

EMIL SCHOPEN, M.D., University of Berne, Switzerland, 1884, of Yonkers, N. Y., fell dead in his office November 17. He was well known for his feats in plastic surgery.

BARBOUR.—Dr. Philip Stanhope Barbour, for the past eight years the efficient superintendent of the Louisville City Hospital, died there on the 14th inst., after a lingering illness. He was born in Jefferson County, in September, 1847, of an old and honored family. At that time his parents resided eight miles from Louisville. He attended such schools as were in the neighborhood for several years, and later took a course at a college at Bedford, Ind. In 1867 he went to Philadelphia, where he attended the Jefferson Medical College. After receiving his diploma from this college he returned to Louisville and began the practice of his profession. He soon attained prominence and acquired a splendid practice. About twelve years ago his hard work began to tell on him and his physicians advised him to seek a colder and more settled climate. He then sought and secured a position under the United States Government as physician to the Indians at the Cheyenne Agency in Northern Dakota. After a brief stay at home in Louisville he found he would have to leave again, and secured the appointment as physician to the Kaw Indians in the Indian Territory, where he remained sixteen months. In 1890 Dr. Barbour returned to Louisville and soon after was appointed superintendent of the City Hospital, which place he has held ever since. Dr. Barbour married Miss Rebecca Tarlton in 1869; she and two children survive him: Mr. Philip D. Barbour and Mrs. Dr. Ellis Duncan. The Doctor made a great record as superintendent at the City Hospital. Many changes have taken place in the hospital during his incumbency, as when he first assumed charge the place was a disgrace to the city, the buildings reeking with vermin, without repair since they were used during the war as a military hospital. Suggestions from Dr. Barbour were largely the cause of the improvements which have taken place. He saw the building enlarged, thoroughly renovated, a new laundry building added, fire escapes erected, a change of system in the training-school for nurses, the installation of the ambulance service, the erection of a pathologic department and postmortem room and amphitheater, and the beautifying of the grounds. He has been able to work amicably with a number of changes in the mayoralty, under a board of charity commissioners and later under a board of safety. During the eight years that he had been connected with the hospital he took but three weeks' vacation, he was up early and late, and no one had more warm personal friends.

PRACTICAL NOTES.

(*Continued from page 1306*).

Chronic Suppurations of the Middle Ear.—E. Schmiegelow describes 96 cases he has operated and gives tabulated details, in the *Nordiskt Med. Arkiv*, 1898, No. 17. He has operated over 300 in all. In 23 cases the affection had lasted eleven to twenty years; in 17, from one to five years, and in one case between forty and fifty years. The mastoid apophysis was alone opened in 20 cases, with 55 per cent. cured; in the rest, the otitis was not arrested. The attic was opened in 14 cases; 7 were cured, 3 improved; 1 relapsed and in 2 the result is unknown. In 53 cases the entire middle ear was opened and 70 per cent. cured. In 7 cases the operation was not completed. In 9 cases there was improvement; 3 cases died—miliary tuberculosis, or meningitis. The transverse sinus was opened once. In 4 cases the operation was followed by traumatic facial paralysis. He states that the patient must be prepared for the tediousness of the after-treatment. In one of his cases it required a year and a half; in several six to nine months, but the average limit was two to four. In 58 cases nothing could be learned as to the etiology. In 10 it commenced as an acute suppuration after influenza. In 3 it was evidently a carious process due to the presence of adenoid vegetations. In 4 cases the suppuration was tuberculous. In 2 it was the result of whooping-cough, in 11 of scarlet fever, 2 of measles, in 5 of trauma and in 1 case there was a carcinomatous growth. The hearing was unaltered after the complete operation in 8; more or less improved in 27.

Meta-Cresol-Anytol in Erysipelas.—Anytin, the new substance that renders insoluble substances soluble, was described in the JOURNAL, XXX, p. 887, and the promising results attained with it in combinations, especially meta-cresol-anytol, in diphtheritic and other bacterial processes. The *Deutsche Med. Woch.* of October 27 contains the report of extensive tests in Loeffler's Hyg. Institute, which show that painting the erysipelatous patch with it will check its development and arrest the infection. The results are so encouraging that further tests are now being made in other bacterial and parasitic affections.

Albuminuria in Malarial Fever.—Thayer presents an analysis of 758 cases of malarial fever occurring in the Johns Hopkins Hospital during eight years, in the *Am. Jour. of the Med. Sc.* for November. Albumin was present in 321 instances, i. e., 46.44 per cent., in the majority of the cases there being but a small trace of albumin. In 121 cases, or 17.5 per cent., casts of the urinary tubules were found. In the regularly intermittent fevers, tertian and quartan, the proportion of cases of albuminuria was 38.6 per cent., while in the estivo-autumnal infections, the majority of all cases—58.3 per cent.—showed albumin in the urine."

Bactericidal Properties of the Becquerel Rays.—Becquerel established that phosphorescent bodies, especially the salts of uranium, absorb the most refrangible and the ultra-violet rays, and emit rays that will pass through certain substances opaque to the sunlight. They will even pass through several substances opaque to the Roentgen ray and can be refracted and polarized. Pacinotti and Porcelli have been studying their bactericidal properties, using for the purpose freshly pulverized metallic uranium, exposed to the sunlight, and then kept at a temperature of 44 to 55 degrees C., without contact with the air. Various germs exposed to the action of the rays thus generated were all killed in the space of three to twenty-four hours, and the microscope showed alterations in their shape indicating some chemic effect on the protoplasm (staphylo-strept.; pyocyaneus; proteus; germs of cholera, tuberculosis, diphtheria and typhus.). They also injected 5 cm. of a very virulent bouillon culture of the streptococcus under the skin of the ears of a rabbit, and exposed one ear to the action of the Becquerel rays, which prevented the evolution of any inflammation, while the non-exposed ear ran the usual course of a streptococcus invasion. The *Gazette degli Osp.* of September 25 observes that the "experience and skill of the investigators, the precision of their work and the innumerable control tests, render this announcement extremely interesting and encouraging."

Typic Osteomalacia in Children.—F. Siegert reports a personal case and adds three from literature, in which all the bones were macro- and microscopically affected with typic osteomalacia. Three were girls of 13, and the fourth a boy, dying at 18 years. All were of infantile habitus. The disease lasted three years in three cases, six in one. All had spontaneous fractures of the lower extremities, decrease in size, assisted by the curvature of the spine and limbs. In three cases there had been a slight, soon outgrown rachitis in early childhood. As phosphorus treatment is a direct specific for osteomalacia of the growing or developed skeleton, the importance of early recognition of the affection is evident.—*Munich Med. Woch.*, November 1.

Nasal Discharge of Liquor Cerebrospinalis.—Körner has collected nine cases, one personal, in which there was a discharge of clear aqueous fluid through the nose, about 15 c.c. an hour, with disturbances in walking and bilateral atrophy of the

optic nerve. The similarity of the cases inclines him to group them all as a special syndrome caused by a tumor of the glandula pituitaria breaking through into the sphenoidal sinus.—*Munich Med. Woch.*, October 25.

Cicatrization of Wounds of the Liver.—Cornil and Carnot report experimentation with dogs, from which they apply the conclusions to man that in case of a simple, not very extensive wound, the hemorrhage can be arrested after opening up the organ with laparotamy, by pouring 10 per cent. gelatin on it. If the wound is more extensive, the lips are brought together with a ligature in Glisson's capsule. A little fibrin or blood-clot between the two surfaces of the wound will not interfere with the cicatrization, but will provide nutritive material for the cells of connective tissue and endothelial cells of the vessels, which are to form the cicatrix and serve as a support for them. More or less extensive pieces of the liver substance can be removed to make the wound more even. If the loss of substance is superficial, a layer of the great omentum can be sutured with a stitch or two to Glisson's capsule. When there is much loss of substance it can be replaced by human fibrin or a piece of sterilized sponge, impregnated with the yolk of an egg, or not. The sponge offers more resistance and fills the cavity better, but the organization of fibrous tissues is less rapid with it. Their article in the *Semaine Méd.* of November 2, is profusely illustrated.

Actinomycosis of the Umbilicus.—A farm-hand working naked to the waist became infected through the navel. The actinomycosis yielded to potassium iodid, but the case suggests the danger of working naked while harvesting, and the necessity of extra cleanliness (*Bull. de l'Acad. de Méd.*, October 18). A farmer with actinomycosis of the neck was also recently observed by Lucas. Besides the actinomycetes in the pus they were also found in the apparently normal portions of the omohyoideus muscle.—*Munich Med. Woch.*, November 1.

Schweninger's Cure for Obesity.—Prof. H. Cohn, the Breslau ophthalmologist, recently visited the Schweninger establishment and witnessed such remarkable cures that he describes his experiences at length. One woman has lost fifty pounds in eight weeks; another twenty in five weeks, and another who weighed 240 pounds when she arrived had reduced her weight to 145 when she left. From exhaustion at the slightest effort, the patients could take long walks and climb hills without fatigue, with the heart working normally. The treatment is threefold: massage, hot baths and diet. The massage is done by the physician, for fifteen minutes, before meals. The patient is instructed to breathe deep, which is considered one of the most important factors of the results attained with the massage. The abdomen is kneaded and finally large pieces of the derma are taken up and squeezed energetically between the hands to crush the subcutaneous adipose lobules. In conclusion the masseur gets on the patient on his knees and digs them into the epigastrium while the patient takes several deep breaths. Cohn describes his consternation at this sight, but the patients did not seem to mind it much, although they frequently drop to sleep afterward from exhaustion, and the abdomen is covered with ecchymoses. The twenty-minute hot baths are given to the arms, feet or a sitz bath, on separate days, never the entire body at once. The water flows in and out of the tub at a temperature increasing from 30 to 40 degrees R. The food is served in tiny doll dishes and only a pint of liquid is allowed during the entire day (Gerolstein sprudel water). Bread, cake, butter, fat, sugar, coffee, tea, milk, wine, beer and brandy are rigorously excluded from the diet, but eggs, ham, roast meats, fruits, vegetables, etc., all in small amounts, afford a varied menu for the four meals. The patients gradually become accustomed to the dry diet. Constipation is controlled by aloes pills at night or an injection of five grams of glycerin in the morning. The Sunday is a day of rest for all, and the rules are suspended. Six to eight weeks are required for the cure, and the patient, to retain the benefits, must not return at once to his former habits of life.—*Presse Méd.*, October 28.

Mud Baths.—Thiroux summarized the general action of mud baths at the International Congress of Hydrology, etc., at Liège, as accelerating the number, while diminishing the amplitude, of the respiratory movements, increasing the arterial tension and the pulsation, stimulating the central nervous system and the peripheral nerve terminals, increasing muscular excitability, compressing the articular surfaces, stimulating nutrition of the bones, increasing the electrocutaneous sensibility and the central and peripheral temperature, exaggerating the perspiration and increasing oxidation processes and the elimination of organic waste. The local action is emollient, owing to the vegetable substances they contain. They progressively relieve congestion and stimulate the circulation in the skin and muscles, while they have a special thermic action owing to the extreme heat possible to be endured without inconvenience by the subject, and for long periods. They buoy up the body with a peculiarly sedative effect, and stimulate the general nutrition and nerve terminals, with a subsinapism of the skin, indicated by the "mud false eczema." He described the fine results attained at Saint Amand in the cure of phlebitis, and chronic troubles induced by a defective venous circulation in the lower members, also in gynecologic cases, concluding with the statement: "Mud baths are therefore the thermal medication par excellence on account of the general stimulation of the organism and the local effects. They stand at the head of modifying and altering measures. Chronic torpid affections, gout, chronic rheumatism, hydrarthrosis and various forms of arthritis, ataxia, etc., are especially amenable to their action."

Prolapsus of Urethra in the Female.—B. Singer has had occasion to observe eight cases at Chrobak's clinic, generally children or women in the menopause. It is caused by an angioma, by relaxation of the tissues or the introduction of foreign bodies. The symptoms are pain in urinating, tenesmus, occasionally inflammation and hemorrhage; sometimes there are no appreciable symptoms. Treatment can only be surgical in a pronounced case.—*Monatssch. f. Geb. u. Gyn.*, October.

Recurrence of Measles.—Vergely reports a case of recurrence two weeks after the initial attack, the first in thirty-one years' experience. The average interval of the cases on record was from the sixth to the sixtieth day.—*Munich Med. Woch.*, November 1.

Alcohologenic Cardiac Epilepsy.—A. Smith applies this term to an epileptoid condition accompanied or preceded by dilatation of the heart. As the state of the heart improves, the epilepsy disappears also. The dilatation of the heart is purely alcohologenic and subsides completely with abstinence from alcohol in some cases, or partially in others, with slight recurrences for a while. In the first group, a slight excess of alcohol above very moderate amounts will induce the attack. In the second group the intolerance to alcohol is not so pronounced. Complete abstinence is the only cure, combined with medication to strengthen the musculature of the heart.—*Munich Med. Woch.*, October 25.

After-Care of the Insane.—Germany was really the originator of the excellent plan of taking oversight of the recovered insane, as of so many others by which mankind have benefited. Its first practical promoter was the Hofrath Lindpaintner of the Duchy of Nassau (born 1793, died 1848), whom Dr. Damerow of the Nietleben Asylum described at his death as "perhaps the last non-medical director of a German institution for the insane," and who himself published in 1844, at Wiesbaden, his useful "Nachrichten ueber die herzögliche Nassauische Irrenheilanstalt zu Eberbach, im Rheingau, von ihrer Begru-

endung (1815) an bis zum Schlusse des Jahres 1842." Midway of this period, Herr Lindpaintner founded the first patronage society. Dr. Earle, who visited Eberbach in 1849, just before its patients were removed to their present asylum on the Eichberg, said in his "German Asylums," published in 1852-53: "In 1829 a Society of Patronage was originated by Mr. Lindpaintner, who became distinguished for the energy and ability with which, as director, he managed the asylum. This society was probably the first of the kind. To the poor who are cured it extends its care and assistance during a period of two years after they leave Eberbach. Up to the year 1844 it had assisted 81 persons, at an expense of 1349 florins." It was then in quiet but successful operation a dozen years or more before a similar move was made at Paris. It seems to me that this statement is due to the memory of one of the early reformers of insane care, in a country of which we hear much less on this subject than of France and England, especially in the period preceding Dr. Earle's very useful book. But I may also call attention to a matter which Dr. Stedman and his colleagues overlook—that the boarding-out system for the insane of Scotland, Belgium and some parts of Germany, gives one of the best opportunities for "after-care," and is so used in those countries to some extent, as it was by me during the three years (1885-88) in which I introduced and managed the Scotch system in Massachusetts. Some very striking examples of virtual recovery and self-support occurred among the 180 patients whom I placed in families, in consequence of the after-care which the State then exercised in such cases; and I doubt not more have occurred in the ten years since I ceased officially to exercise such after-care.—F. B. Sanborn, in *Boston Med. and Surg. Journal*, March 24.

MISCELLANY.

The "Medical Record" Again.—Our attention has been called to an article in the *Medical Record*, entitled "Recent Experiences in Military Surgery after the Battle of Santiago." The *Record* says: "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of November 12 publishes an article with the above title, suppressing the name of the author, which article is lifted bodily from the *Medical Record* of July 30, 1898, its aspect, however, being altered by the insertion of illustrations. A clear case of kleptomania." The truth about the matter is that Professor Senn wrote his article in duplicate. One article, with the illustrations, was sent to this office, which, by the way, is in his own hand-writing. The other was sent to the *Medical Record*. In the fullness of time the JOURNAL published the article, which was as much its property as any other article which has come into the JOURNAL office. The *Record* having published it first, however, we would not have re published the article but for the imperfect manner in which it appeared in the *Record*, as without the illustrations this report was almost valueless. Still, however, we presume it was good enough for the *Record*. In regard to suppressing the name; this is a prevarication, as the name of Professor Senn appears in the contents and title page of the JOURNAL in its proper position, and also first in the "Miscellany" of the same number, the error having been discovered after the article in question had been passed through the press. An error so seldom appears in the JOURNAL that it is naturally an object of mark by our esteemed contemporary.

Black Excretions in Hystero-Epilepsy.—The *Gazz. degli Osp.* of September 13 relates the case of a lad of 13 years, a hystero-epileptic, through whose skin exuded a black substance, while the urine was also blackish and the feces covered with a black layer. When the lad was sent up to Naples, the phenomenon seemed to be arrested, but returned again after his return home to Calabritto, when he also vomited the black substance. Zuccarelli personally saw the black substance oozing from the skin. It looked like coffee grounds, and left inky tracks on the skin as it slid down. The substance contained some mineral elements, but he could not discover any hematoxin or any other organic substance. He is inclined to connect it with the antitoxic theory of epilepsy, but in a discussion at the Naples Accademia Med. Chir., others attributed it to the hysteria. Gallozzi also described a case, a relative of a Neapolitan physician, a classic hysteric, in whom intestinal occlusion suddenly appeared, with stercoral vomiting and exudation of stercoral matter through the mammæ and axillæ. She recovered after two months of complete occlusion.

New York State Hospital for the Insane.—The recent proposition for the construction of colony buildings for 2260 patients at Central Islip, New York, is an exemplification of what can be done with limited means, and well done. The buildings are largely fireproofed; that is, the central buildings, all connecting corridors and two floors, beside fire-proof party-walls. The building specifications call for the best quality of construction, and provide for the completion of the group in every detail, ready for occupancy, including water-supply, heating, lighting, plumbing, and fire protection. The aggregate for the whole work is less than $500 per patient. This furnishes a marked contrast with former palatial designs that have cost more than $3,000 per capita, and which will not compare in efficiency to the Central Islip group.—*Charities Review*, November.

Effect of Altitude on the Blood.—The increased number of red corpuscles noted in high altitudes has been found to be due almost entirely to errors in the Thoma-Reiss apparatus, caused by the differences in the atmospheric pressure, as has been confirmed by Gottstein's tests with it in the pneumatic cabinet. Schröder and Meissen have corrected this defect by making a deep groove around the edge, into which the glass cover fits air-tight and excludes the outside air completely. The question is now ready to be investigated anew, eliminating this cause of error.—*Munich Med. Woch.*, Nos. 4 and 42.

Left-Handedness.—A. Rothschild attributes this condition to lack of proper training in childhood, and relates a case of a 4-year-old girl whom he cured permanently by hypnotic suggestion.—*Vienna klin. Rund.*, October 23.

Puberty.—A. Marro, who is with Lombroso, the founder of the new school of criminal anthropology, has been studying the subject of puberty in its relations to anthropology, psychiatry, pedagogics and sociology, and asserts that marriage between two healthy persons after they have both attained their full development—beard, muscular and skeletal development, habits of work and money-saving in the man; and bosom, adipose tissue and grace of outline in the woman, is the ideal from every point of view. Before this period sexual intercourse is directly injurious to the development of mind, body and character. It favors a return to savagery: the abnormal development of one function at the expense of the growing organism as a whole, the strife with rivals, the efforts to win the favor of the other sex, leading to thefts and other crimes, the degenerate offspring that are born to immature parents, etc. From every point of view therefore, the efforts of educators and social conventionalities should be exerted to delay the precocious gratification of the sexual instincts. But arrived at nubility, it is equally important that the sexual instinct be legitimately gratified, and this can not be accomplished by masturbation, promiscuous intercourse or free love. Besides the dangers of disease and excesses, they incite to sexual strife; activity is diverted from the wholesome field of social virtues, and the character warped, rendering it deceitful, combative and cruel. He is heartily in favor of forbidding marriage to degenerates, and denounces the marriage of an old man to a still menstruating woman, on account of the degen-

acy of the offspring in both cases, affecting the second generation if not the first.—From abstract in the *Journal de Méd. de Paris*, October 30.

Congenital Syphilis.—R. Hecker has been studying the variations from normal in over a hundred children born dead or living soon after birth, with congenital syphilis, and publishes his conclusions in the *Deutsches Arch. f. Klin. Med.*, 61, No. 1. He notes that the vessels of the umbilic cord are always affected with specific lesions, which can aid the diagnosis in living children. Typic osteochondritis of the long bones is frequent, but not invariably present. The spleen was found swollen in every case. The kidneys also are always diseased in congenital syphilis, evidenced by albuminuria in children that survive. The liver is invariably swollen and with syphilitic manifestations.—*Munich Med. Woch.*, October 25.

Exophthalmic Goiter.—A theory is proposed by C. Schwerdt of Gotha, in a long communication to the *Munich Med. Woch.*, concluding in No. 44, which explains exophthalmic goiter as a disease of the lymph and blood caused by nervous influences, in which the etiologic factors are an abnormal assimilation of chyle, an abnormal circulation of lymph and an abnormal activity on the part of the thyroid gland. There is also an abnormal circulation in the collateral routes, manifested by intermittent edema, which should rank with the triad: exophthalmus, tachycardia and struma. The variations depend upon the individual or inherited predisposition of the organism for its parts. In persons with strong muscles, instead of compensation in the line of atrophy of the hollow organs, it takes the form of hypertrophy of the muscular wall and there is enteroptosis. In others, with rudimentary enteroptosis, the atony of the lymphatic system leads to typic morbus Basedowii. Still others drift into myxedema or sclerodermia as they enter life, and theoretically must have passed through morbus Basedowii during their embryonal existence. These facts explain why neurasthenia, general atony and enteroptosis are becoming more frequent, while cases of exophthalmic goiter are rarer, and myxedema and sclerodermia still more seldom seen. An alteration of the nervous system, of the psyche is the fundamental cause, and in the strengthening of the psychic forces lies the road to recovery, so that the physician, whatever means he adopts, is after all a psychotherapeutist.

Askanazy states in the *Deutsches Arch. f. klin. Med.*, 61, 2, that in four cases examined, he found in each one an extensive and well-defined affection of the striped muscles; the muscles grown through with fat, interstitial lipomatis. The patients were emaciated. This hitherto unnoticed lesion explains the muscular weakness, the trembling, the insufficiency of the ocular muscles, etc. The nervous system was found intact to its finest ramifications in the muscles in each case. The thyroid had the usual characteristic alterations.—*Munich Med. Woch.*

Laryngitis Rheumatica Circumscripta.—Uchermann describes a form of primary acute laryngitis, occurring where there is a rheumatic predisposition, without catarrh, but with solid infiltrates which rapidly disappear under salicylic acid.—*Munich Med. Woch.*, October 25, from *Cbl. f. In. Med.*, No. 39.

Laparotomies at Home.—Professor Rydygier has become convinced that the dangers of infection are less in a private residence than a hospital; the germs encountered are not pathogenic or have not acquired virulence by "passages." He therefore advises patients with a well-lighted room and means sufficient to pay for the more expensive home after-treatment, to be operated on in their own residences. He does not consider it necessary to remove more than the curtains, portieres and carpets from the room.—*Vienna klin. Woch.*, November 3.

Cerebrotome and Aspirator.—Radojewski describes a new instrument for very small pelves which is manipulated entirely outside of the genital parts, thus reducing the danger of infection and injury. After the trunk is born the spine is cut at the second or third dorsal vertebræ, and the brain chopped fine through the foramen spinosum and aspirated out, when the empty skull can be easily extracted.—*Deutsche Med. Woch.*, 1898, No. 42.

Sail-Cloth Operating-Table.—Professor Rydygier attributes the pneumonia that so frequently follows operations, to the chill from the glass or metal table top, and obviates this by having a sail-cloth top made to fit over the iron frame, and removed and washed after each operation. If a solid top is indispensable he uses one of hard wood. The last thing before operating, he washes his face, wets his beard and hair, rinses his mouth and gargles with some antiseptic fluid, which he confesses produces rather a sensation among the spectators. He never uses gloves, mask or cap, but has a couple of basins beside him to rinse his hands frequently during the operation, to mechanically remove any germs that alight after his preliminary painstaking disinfection. He rejects brushes and sponges on account of the difficulty in sterilizing.—*Vienna Klin. Woch.*, November 3.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about $180, will be made on July 14, 1899, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but can not have been published, and must be received by the secretary of the college on or before May 1, 1899. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. The prize for 1898 has been awarded to Dr. S. A. Knopf of New York city, for his essay entitled: "Modern Prophylaxis of Pulmonary Tuberculosis and its Treatment in Special Institutions and at Home."

Calmette's Gift.—Dr. Calmette has presented to the Pasteur Institute at Lille, of which he is superintendent, 250,000 francs, which represent the profits realized in the distilleries at Seclin by one of his inventions.—*Progrès Méd.*, October 29.

International Memorial Honors.—The monument erected by international subscription at Copenhagen, to Meyer, the author of the first works on adenoid vegetations, was recently unveiled, with an address by Sir Felix Semon, the distinguished English laryngologist.

Co-operative Surgery and Medicine.—Legendre is trying to organize an association in Paris to be composed of both physicians and surgeons, meeting from time to time to study important questions together from their different points of view, each benefiting by the experience of the other.—*Progrès Méd.*, October 29.

Responsibility of the Surgeon.—A woman died recently from sepsis, at Lyons, France, after an operation by a prominent surgeon, and the husband sued for damages. The court decreed that it "would be excessive to hold the surgeon responsible for the unforeseen, extraordinary, sometimes even improbable complications, that may occur in any surgical intervention, even the most inoffensive. Such responsibilities would render the practice of medicine impossible in many cases." The plaintiff was condemned to pay the surgeon's fee of 200 francs and the costs of the suit, as the "death was merely a much-to-be regretted misfortune, escaping all the previsions of science, as occurs at times, in spite of all the precautions suggested by human wisdom."

Not Responsible for Acts of Physician.—On the appeal of the Louisville & Nashville Railroad Company vs. Foard, a personal injury case brought by Foard against the company, the company insisted that the trial court had erred in permitting the plaintiff below to prove by himself that the attending physician and surgeon, who was furnished by the Company to treat his injuries, sustained in its service, was negligent in his treatment of the wounds, and that he was rough in his treatment of him, witness going into detail, and that by reason of this bad treatment his leg had to be amputated the third time. With this contention of the Company the court of appeals of Kentucky agrees, holding, Oct. 7, 1898, that the admission of this testimony was improper. It says that the Railroad Company was in no way responsible for the acts of the physician, or for his neglect of the plaintiff, unless it were shown that the Company was careless and negligent in his selection and that he was incompetent. It maintains that in the employment by a railroad company of its surgeons to attend the persons injured by its trains, the relation of master and servant and principal and agent does not exist; and that if the railroad company is careful, and selects suitable surgeons, it is not responsible for their neglect or malpractice. In this case there was no pretense that the Company was careless or negligent in the selection of this physician and surgeon, or that he was in any way incompetent, and, consequently, for the reasons stated, the court insists that the plaintiff should not have been permitted to prove the misconduct, neglect, or maltreatment of the physician, in this action against the Railroad Company.

Need Not Submit Blindly.—A man 56 years old stumbled over a large flat stone which was near the middle of, and several incher higher than, the sidewalk. There was evidence tending to show that he fell violently and sustained, among other injuries, a rupture. But when he sued the city for damages, it set up, as one of its defenses, that the next morning after the accident the plaintiff was advised by the hospital surgeon to have an operation for hernia performed, and that he obstinately and unreasonably refused to do so. The plaintiff admitted that he was advised to undergo the operation, and made a mistake in not accepting the advice. When it came to charging the jury, the trial judge said that the plaintiff was bound to use ordinary care to cure and restore himself, and to use such methods reasonably within his reach as would make his damage as small as possible; that he could not recklessly enhance his injury, and charge it to the defendant; and that, if the jury believed that the plaintiff declined to act upon the advice of the house-surgeon and declined to submit to an operation for the radical cure of his hernia, the defendant was not chargeable with the consequence of his refusal. But the second appellate division of the supreme court of New York says, Williams vs. City of Brooklyn, Oct, 18, 1898 (53 New York Supplement 1007), that this was a statement of the law more favorable to the defendant than was needful. It holds that the plaintiff was not required to submit blindly to professional advice. He was entitled and bound, it insists, to exercise reasonable judgment, and if his conduct was that of a reasonably prudent man he was within his rights in refusing to submit to an operation, and could not be charged with negligence in that respect. It may be added that on this question the jury found in the plaintiff's favor, and the appellate division affirms a judgment in his behalf.

Admission of Expert Witness.—Two things, the supreme court of Pennsylvania says, must concur to justify the admission of an expert witness: 1. The subject under examination must be one that requires that the court and jury have the aid of knowledge or experience such as men not specially skilled do not have, and such, therefore, as can not be obtained from ordinary witnesses; 2. The witness called as an expert must possess the knowledge, skill or experience needed to inform and guide the court and jury in the particular case. Upon such a question such a witness may be called, and may testify not merely to facts, but to his conclusions from the facts, because the court and jury are without the knowledge necessary to enable them to draw the conclusions for themselves without aid. Thus, the court holds, Oct. 17, 1898, in the homicide case of Commonwealth vs. Farrell, that the question about the length of time after death when rigor mortis may be expected to set in was a question for expert medical testimony, though long experience and observation might stand in lieu of the study of books, and qualify one to speak as an expert upon this subject. But the witness called in this case as an expert upon this question had no medical knowledge, had read nothing on the subject, and had no experience except as an undertaker's assistant in preparing dead bodies for burial, and his attention as an undertaker did not seem to have been specially directed to this question, while he frankly stated that he was not an expert upon the particular subject. For the reasons stated, the court holds that he was not competent to testify as an expert upon that question.

Marriage no Defense.—In a prosecution for ravishing a female who was under 18 years, the fact that she has forgiven the accused, or has subsequently entered into the marriage relation with him, the supreme court of Kansas holds, State vs. Newcomer, Oct. 8, 1898, will not constitute a defense, nor relieve him from the consequences of the crime. The explanation vouchsafed by the court is that, the female being under the age of consent, her consent to the sexual act constitutes no defense, and neither her forgiveness nor anything which either or both may do will take away the criminal quality of the act, or relieve the defendant from the consequences of the same. The principle of condonation, which obtains in divorce cases, where civil rights are involved, has no application in prosecutions brought at the instance of the State for the protection of the public, and to punish a violation of the law. It is true, continues the court, that society approves the act of the defendant when he endeavors to make amends for the wrong done to the injured female by marrying her; and usually a good-faith marriage between the parties to the wrong prevents or terminates a prosecution, but the statute which defines the offense, and declares punishment therefor, makes no such provision. Finally, the court says, if the defendant has acted in good faith in marrying the injured one, and honestly desires to perform the marital obligations resting upon him, and is prevented from doing so by the influence and interference of persons other than his wife, it may constitute a strong appeal to the prosecution to discontinue the same, or to the governor for the exercise of executive clemency; but, as the law stands, it furnishes no defense to the charge brought against the defendant.

Indiana Dentistry Law.—Section 5596 of the Revised Statutes of Indiana of 1894, provides for the appointment of a board of examiners consisting of five members, three of whom are to be chosen by the Indiana State Dental Association. This section, it was contended, in Ferner vs. State, was unconstitutional, as in violation of a clause in the State constitution forbidding the granting of privileges which shall not, upon the same terms, equally belong to all citizens. It was argued that by said section a special privilege was given to the Indiana State Dental Association of naming members of the Board of Examiners, and prescribing the standard of qualification. But the supreme court of Indiana holds, Oct. 12, 1898, that said section 5596 does not contravene the constitution. It says that it is not necessary that members of the Association shall be appointed upon the Board. And it looks at the power to appoint as in the nature of a duty, rather than a privilege, insisting that it may not be said to be a special privilege any more than that conferred upon circuit judges to appoint city

missioners or a drainage commissioner. or that the governor, the president of the State University, and superintendents of common schools shall be members of the State Board of Education, or in many other instances where non-judicial functions are imposed upon judicial officers, or non-executive functions are cast upon the executive, or where men, by reason of their learning, are designated to perform a service to the public. Taking up the suggestion that the act in question does not afford due process of law, in that it fails to extend the right of appeal from decisions by the board, the court says that it may be seriously doubted if one who does not seek a decision of the Board may complain that he could not appeal from its action, and that it may be suggested, also, that the general rule is that appeals are recognized as allowable from judicial decisions only, and that boards of the character of that in question do not render judicial decisions. Moreover, the party here charged with unlawfully practicing dentistry, and convicted, objected that the evidence did not support the verdict that he engaged in the practice of dentistry. It showed that he leased and occupied rooms for several months for the declared purpose of practicing dentistry; that he had done dental work for three or more persons; that at times he engaged in filling teeth, and at other times did dental work at the bench. This, the supreme court regards as sufficient to require the inference that he engaged in the practice. It also thinks it quite clear that it is made a crime to practice dentistry "without being registered," registry, within the purpose of the law, relating to the permanent authority to practice dentistry, and that the temporary permit issued by any member of the Board of Examiners is a protection only until the Board shall meet to make the registry.

Our Cuban Exchange.—We are glad to welcome once more the *Revista de la Medicina y Cirurgia de la Habana*, which we have missed from our mail since last spring. The *Revista* is a fortnightly journal, but the numbers we have just received, Nos. 7 and 8, bear date of April 10 and October 10. They contain no reference to any events in the interim, but calmly resume their scientific communications with the description of a case of putrefied placenta with a living child.

Artificial Assistants.—The burlesque number of the *Munich Med. Woch.*, issued on the sixty-fifth anniversary of the local medical society, is an exact reproduction of the regular make-up, but sparkling with fun in every line. The rear outer cover is a display ad. of artificial assistants for surgeons, etc. "The disadvantages of the living assistants hitherto in use are familiar to all. They assist, but have too many annoying 'secondary effects.' Some are unable to keep their mouth shut, some have 'exaggerated reflex excitability,' some have opinions that differ from those of their chief and criticise him, some leave matches around and the gas burning, some shock spectators by their lack of gentleness. These drawbacks are all entirely obviated with our new patent glass and iron assistants, transparent, sterilizable, to connect with either electric or steam power. They are supplied in two grades, smooth or rough finish, for private practice or general hospital work. They are adjusted for only one or two specialties each, but extra specialty appliances can be screwed on as desired. Assistants for surgeons: Say 'sponge' and 'gauze': Style *A*. Wipes 10 times a minute, 1200 Marks; *B*. Wipes 20 times a minute, 1300 M.; *C*. No hinge in back, 1100 M.; *D*. Without buttocks (an important improvement, allowing spectators complete oversight of the operation) 2000 M. For internal medicine: Do percussion, and find albumin in urine: *A*. Once an hour, 100 M.; *B*. Three times an hour, 150 M.; *C*. Stain bacilli, 200 M. For obstetrics and gynecology: Style *A*. Automatically perform vaginofixation on every uterus, 10 M.; *B*. Ditto vesicofixation (new), 20 M.; *C*. Antefixation according to indications, 200 M.; *D*. Abhor all therapeutic treatment of retroflexion, 600 M., etc." The leading article is a report of successful experimentation to secure asexual propagation of the human species by fission, accomplished by administering an extract, Tolstoidin, thus named from the idea having been suggested by the disapproval of the sexual methods expressed in Tolstoi's "Kreutzer Sonata."

Contributions to the Army Medical Museum.—The officer in charge of the Army Medical Museum has invited attention to the possibility of enriching the Museum by contributions from general hospitals and hospital ships, and the Surgeon-General of the Army has published the communication in the form of a circular from his office. The contributions referred to in paragraph 147, "Manual of the Medical Department," are rare pathologic specimens from animals, including monstrosities; typic crania of Indian tribes, specimens of their arms, dress, implements, rare articles of their diet, medicines, etc., and specimens of poisonous insects and reptiles and of their effects on animals. The communication is as follows: The contributions to this Museum from the active theater of the recent war with Spain and from the extensive field of subsidiary operations, have been so few and unimportant that it seems desirable to renew the attention of medical officers to this important subject. The hurry and peculiar military conditions of the Santiago campaign, and amount of work imposed upon the medical officers in our large camps of instruction would naturally obscure the more remote interests of the Museum; but from our large general hospitals and hospital ships and the more deliberate methods of our forces of occupation may well be demanded a return to the systematic collection of specimens illustrating the bone and tissue injuries produced by modern firearms and explosives, and a careful preservation of such illustrations of disease as may be obtained upon cadaveric examination. As it will be necessary to add a guide to the preservation of specimens, the following suggestions have been prepared: Soft tissues are preferably placed in a 20 per cent. solution of commercial formaldehyde (or formalin), the specimen being completely covered by the solution. The fluid on very soft tissue, or large masses of tissue, such as the liver, spleen, etc., should be changed after two or three days. When formalin is not obtainable, commercial alcohol may be used. Bones and joints, after having been roughly cleaned, may be simply wrapped in a cloth wet with the preservative solution, and then again wrapped in oiled paper or silk. Since glass and earthenware vessels are liable to be broken in transit, with escape of their fluid contents and damage to the specimens, the use of tin vessels is recommended, the covers to be tightly soldered on. Whatever vessel is used should be packed in sawdust, excelsior packing, stiff paper, or equivalent substitute, in a wooden box. Small dry specimens may be sent by mail; and wet specimens also, if enclosed in the boxes which have been approved by the Post-Office Department. Specimens should be carefully numbered, and a letter of information forwarded to the Museum when the specimen is shipped; the letter to contain the number of the specimen, a description of its nature, and if possible, its history. In addition to the contributions specified, those enumerated in paragraph 147, "Manual for the Medical Department," are especially worthy of consideration, in view of the opportunities offered in our new territory. Although paragraph 1130, A. R., provides for the transportation of all such contributions through the Quartermaster's Department, it should be known that if the importance of the object, or security demands a more prompt delivery, the package may be shipped to the Curator of the Museum by express, the charges to be paid here. The receipt of any package will be duly acknowledged, and credit given for the contribution.

Expensive Charity.—The *Bulletin Méd.* of Paris relates that a woman recently applied to the free dispensary at the "Quinze

Vingt" for treatment, but had the thoughtfulness to remove a pair of diamond ear-rings from her ears and put them in her pocket before entering the room. When she received her consultation ticket she found that the solitaires, worth 4000 francs, had disappeared from her pocket, and in spite of a large reward offered were never recovered.

Societies.

The following recent meetings are noted:

Illinois.—Chicago Society of Internal Medicine, November 22; Fox River Valley Medical Society, Aurora, November 15.

Indiana.—Allen County Medical Society, Fort Wayne, November 15.

Iowa.—Eastern Iowa District Medical Association, Keokuk, November 17.

Kansas.—Topeka Academy of Medicine, November 14.

Michigan.—Saginaw County Medical Association, Saginaw, November 11.

Missouri.—St. Louis Academy of Medical and Surgical Sciences, November 22; St. Louis Medical Society of Missouri, November 19.

New York.—Binghamton Academy of Medicine, November 15; Kings County Medical Society, New York City, November 10.

Ohio.—Muskingum County Medical Society, Zanesville, November 10.

Tennessee.—Maury County Medical Society, Columbia, November 15.

Philadelphia.

BEQUESTS TO CHARITY.—Through the death of William W. Whitehead, a bequest of $500 has been received by the Samaritan Hospital of this city, and through the death of Abraham McGarry, $1000 to St. Joseph's Hospital.

LAST HOSPITAL TRAIN.—Recently the last hospital train was dispatched to Camp Meade by the relief commission, returning with sixty patients, who were distributed to the Woman's, St. Joseph's and St. Agnes Hospitals.

DR. JOHN BLAIR GIBBS.—Many have been the honors conferred upon this distinguished physician, who lost his life upon Cuban soil, but the latest one is that of his academic alma mater, Rutgers College, which recently unveiled a memorial tablet in Kirkpatrick Chapel at that institution.

MORTALITY STATISTICS.—During the week just closed there have been reported to the Bureau of Health a total of 414 deaths, an increase of 17 over last week and of 75 over the corresponding week of last year. Of the total number of deaths, 116 occurred in children under the age of 5 years.

PERSONAL MENTION.—Among the Pennsylvania soldiers being mustered out of service may be mentioned Battery A of Philadelphia. In order to establish the condition of the men upon their discharge, competent examiners have been commissioned to make a thorough physical examination of the men. The names of the physicians who are conducting this work are: C. F. M. Leidy, Joseph Shellissy, Ward Brinton and Walter Roberts.

DEATH AMONG SOLDIERS.—Within the past two weeks two deaths from typhoid fever have occurred among soldiers at the hospitals. The first death was that of John M. Warner, Company M, Fourth Pennsylvania, who contracted the disease in Porto Rico and was subsequently brought to this city on the hospital ship *Relief*. The second case was that of Samuel Pemberton of Company A, First Delaware, who contracted typhoid fever in Camp Meade and was brought here October 22.

LECTURES ON X-RAY.—Dr. Charles I. Leonard is giving a series of lectures at the University Hospital on the subject of skiagraphy, describing the method and apparatus used, as well as the theory on which the subject is based. In the lecture of Saturday it was proposed to describe the method of taking the photographs of different organs and different parts of the body, as well as to draw conclusions from the study of the plates, so that a diagnosis could be made of diseased conditions.

QUARANTINE AGAINST HYDROPHOBIA.—Whether it be true or not that hydrophobia is an acute infectious, contagious or inoculable disease, the State Board of Health has seen fit to quarantine against all dogs in a village near the northern border of the State, for a period of ninety days. This action has been taken on account of an epidemic of hydrophobia there for some time among cattle, horses and swine.

IMPROVEMENTS AT GERMANTOWN HOSPITAL.—This busy hospital will soon have proper accommodations for an isolation ward for the treatment of cases who can not cared for in the other departments. The addition is to contain three rooms for patients, one room for nurses, and one for a sick-diet kitchen. The addition is one story in height, with basement, built of brick and tile and will cost several thousand dollars. The ward is the gift of Mr. Stephen Green, and was given as a memorial to a member of his family. The building will have all the latest improvements.

WAR INVESTIGATING COMMITTEE.—It is reported that the committee will visit Philadelphia within the next ten days. Just the object of the visit is not fully known, but it is thought to be in connection with the offices of deputy quartermaster and office of Chief Medical Inspector Peyton. Several are mentioned who, it is thought, will be summoned to go before the Board and testify as to what they have witnessed during the course of the war. The officers of the different departments feel confident that no exception will be taken to the method in which the business of these departments have been conducted. So far no complaint has been made against either official in charge of the officers stationed at this place.

RELIEF TO SICK SOLDIERS.—The Hospital Committee of the Woman's Sanitary League, which has been associated in the relief of soldiers at the Polyclinic, Medico Chirurgical, St. Agnes, Jefferson, University and Women's Hospitals, recently held another meeting and elected officers. The Executive Board consists of five principal officers, with chairmen of standing committees and other members. Committees are also appointed on education, hospitals, legislation, sanitary science and municipal questions. The Hospital Committee was instrumental in furnishing money, supplies and delicacies for the sick during the summer months just closed.

DR. CHARLES H. FRAZIER.—Owing to the resignation of Dr. J. William White, from the surgical staff of Blockley, some weeks ago, in order to assume charge of the clinical work at the University of Pennsylvania, the Board of Charities and Corrections, at a recent meeting elected Dr. Charles Harrison Frazier as successor to Dr. White. Dr. Frazier is a graduate of the University of Pennsylvania, 1889 (College) and 1892 (Medical). He was resident physician to the University and Episcopal Hospitals and subsequently resumed his studies in the University of Berlin and is a member of the surgical staff of Howard Hospital and assistant-surgeon at the University Hospital and to the Out-patient Department of the Episcopal Hospital, and also a member of the editorial staff of the *Philadelphia Medical Journal*.

MARINE SOLDIERS.—During jubilee week in Philadelphia there were a number of sick soldiers removed from several vessels at anchor in the harbor, and transferred to the Marine Hospital. Eleven of them were removed from the *Texas*, ten from the *Topeka*, one from the *Minneapolis* and one from the *Richmond*. In many instances the disease subsequently proved to be typhoid fever. It is reported that it is the opinion of the medical officers stationed on the *Texas*, that, as there has been no means of contact with infected men, the disease in the present instances has resulted from bad food or impure water on board the vessel. In the Marine Hospital there are at present eighty-eight cases, a great increase over the usual average. This state of affairs has doubtless been brought about by the fact that there are more vessels here at present than have been in Philadelphia for many years.

National Relief Commission.—Mr. George C. Thomas, treasurer of the National Relief Commission, makes the following statement through the banking firm of Drexel & Company: Cash previously acknowledged, $78,405.40; various donations, $68.17; value of supplies received to date, $40,345.00; and total, cash and supplies, $118,808.57. From this report it is observed that the total amount of money is increased but little from week to week, while the work with which it is engaged necessarily goes on, from the fact that sick soldiers are transferred from army corps by money provided by the Commission. Up to the present time most of the sick soldiers here been brought to Philadelphia, but it is thought that hereafter the majority will be taken to Baltimore and other cities. The outcome of the trip of President John H. Converse and Secretary French of the National Commission, to Washington, where they went to confer with the War Department, regarding the future action to be taken by the Commission, has not been made public, but it is believed that the visit was not altogether encouraging to the Commission. Having carried on work which it was thought should have been done by the Government, the Commission had a right to expect support from that source, but up to the present time it may be said that the prospects are discouraging.

Dr. Benjamin Lee.—At the forty-first regular meeting of the State Board of Health, recently held, the secretary, Dr. Benjamin Lee of Philadelphia, made his report, dealing largely with cases of communicable diseases that have occurred in various portions of the State, including inspections made and sources of pollution.

A Case of Supposed Leprosy.—Last week a Russian sailor was taken to the Municipal Hospital, thought to be suffering from leprosy. It is stated that the man gives his nativity as Arensburg, in the Island of Oesel in the Baltic Sea, where the disease is quite prevalent.

Hospitals will be Reimbursed.—It is reported that it is the intention of the Government to reimburse all hospitals for the expense incurred in caring for the soldiers brought to those institutions. It is a source of some gratification also to state that while the hospitals of Philadelphia were first to volunteer their facilities to the Government that in no instance (*Press*) has a bill been sent in, as has been done by hospitals of two near by cities. The Government now volunteers to pay to all such hospitals sixty cents a day for each soldier so treated, and, furthermore, to reimburse all institutions who have been instrumental in sending out hospital trains to the different army camps.

Rebuke for Physicians.—A complaint has been lodged against the profession by a resident of Germantown, who states that cases of diphtheria are not properly reported and thereby the disease becomes more common.

Poisoning by Castor Beans.—Recently, while playing near a vacant lot, three children ate of castor beans which had been thoughtlessly thrown from a neighbor's garden. Soon afterward all these children became violently ill, but in one case death resulted from acute nephritis. While the other two children were also suffering from the same disease it appears milder, and hopes are entertained for their recovery. The cases have been reported to the Board of Health by the coroner's jury, who thought the owner of the lot should be thoroughly censured for not complying with the city ordinance requiring that all vacant lots be enclosed.

Proceeds of Charity Ball.—The hospitals which have already applied for proceeds of Charity ball to be given soon are: Children's department of the University Hospital, Free Hospital for Consumptives, Samaritan Hospital, St. Christopher's Hospital, St. Timothy's Hospital, Children's Hospital.

Lecture on Sick Diet.—At the Food Exposition now being held in this city, Mrs. Rorer, who has obtained a national reputation in the art of cooking, gave a lecture on Doctor's day, on the preparation of foods for the sick. The lecture was largely devoted to the albuminoids, and formulæ were given for such articles of diet as albuminized whey, frozen junket, chicken, panada, and beef paste. The lecturer also dwelt largely upon the subject of infant feeding, especially regarding milk, taking the view commonly held by the medical profession, and the subject in this way may be presented so that much good may arise from the lecture.

Diphtheria Again Rampant.—Diphtheria has spread rapidly in the northern section of the city, and for the week just closed four deaths from the disease have occurred in that section. The disease exists in both public and parochial schools, and the principals of those institutions state that owing to the prevalence of the disease there are many absentees, and as no one has been detailed to look after these students it is not known whether they remain away for fear of contracting it or whether they have already been affected.

Dr. William Ashhurst, who has for several years been practicing medicine in Mexico, has returned to the city and has established offices at his father's residence, 2000 West DeLancey Place.

Dr. and Mrs. S. Weir Mitchell will leave shortly for Europe, and subsequently, Egypt, where they go for the benefit of the health of Mrs. Mitchell, whe has been slowly convalescing from the serious illness of last winter.

Dislocation of Ensiform Cartilage.—A man weighing 200 pounds has been admitted to St. Mary's Hospital for a dislo- of the ensiform cartilage. The patient is an employe of a large mill, and it is supposed that the injury was received while performing his usual duties in lifting several heavy gates about the premises.

Washington.

Health of the District. The report of the health officer for the week ended November 12, shows the total number of deaths to have been 98: 69 white, and 29 colored. The principal causes of death were: Nervous diseases 11, circulatory 7, genito-urinary 6, consumption 15. There were 5 fatal cases of typhoid fever, 4 of diphtheria, 1 each from whooping cough and scarlet fever. At the close of the week there were 130 cases of diphtheria and 120 of scarlet fever. There were 124 births, of which 61 were white and 63 colored.

Central Dispensary and Emergency Hospital.—At the meeting of the Hospital Board, November 11, the report of the attending staff showed a steady increase in the work of the hospital. The board has decided to make extensive improvements in the building. The operating and the emergency rooms are to be remodeled and new tile floors and steel ceilings placed throughout the building. The Ladies' Auxiliary Board has offered to appropriate $800 to assist in the improvements.

Contagious Hospital Fund.—At the special meeting recently held by the Daisy Chain Hospital Promoters, it was decided to donate the $12,000 to the Garfield Memorial Hospital to assist in building the contagious disease hospital, now in course of erection. The funds are available immediately.

For Removal of Weeds.—Health Officer Woodward has prepared a bill enforcing the removal of weeds from building lots in the district. The Bill provides that whenever there are weeds four or more inches in height within the district, the owner or occupant of the premises shall remove the same after seven days' notice. A penalty of $10 fine is provided.

Pure Food Law Enforced.—Three grocers were recently fined $15 each for violating the Pure Food Law. It was shown in court that they exposed for sale and sold a commodity called lard, which, after examination by the district chemist, proved to contain no lard whatever, and which was a mixture of beef tallow and cottonseed oil. The health department is rigidly enforcing this law and, as a result, many of the adulterated foods are disappearing from the shops.

Will of Dr. Harrison.—The will of the late Dr. George

Byrd Harrison has been filed for probate with the registrar of wills. The instrument was made in 1883, and bequeaths all his immense estate to his wife.

ANOTHER SURGEON SUED.—One Forest has recently entered suit against Dr. Thomas P. Mallon of the Providence Hospital, seeking to recover damages in the sum of $10,000. The usual declaration is set forth, "incompetent doctor, short leg, subsequent pain and suffering, and a need of money to soothe the woe." This is the second suit of its kind recently entered in the District, and the doctors may expect an epidemic of such suits. It is rumored that a son who was born with a short leg is about to enter a suit for damages against his mother.

MILITARY SURGEONS ASSIGNED.—Major John W. Bayne, brigade-surgeon, U. S. V., has been ordered to Washington and placed in charge of all sick men of the Army arriving here. Acting Asst.-Surgeons Chas. G. Marbery and George D. Morris have been ordered to return from Chickamauga and Porto Rico, respectively, and report in person to the Surgeon-General.

Louisville.

KENTUCKY UNIVERSITY.—The announcement of the Medical Department of Kentucky University has just been issued, with the following faculty: T. C. Evans, dean, professor of ophthalmology, otology and laryngology; Henry E. Tuley, secretary, professor of principles and practice of medicine and diseases of children; Leon L. Solomon, professor of materia medica and therapeutics and of pathology; Carl Weidner, professor of physiology and histology; W. Ed. Grant, professor of chemistry and cutaneous and genito-urinary diseases; J. Garland Sherrill, professor of surgery; Henry L. Stone, A.M., professor of medical jurisprudence; and the following clinical professors: T. E. Evans, ophthalmology, otology and laryngology; Henry E. Tuley, diseases of children; Leon L. Solomon, medicine; Carl Weidner, medicine and diseases of the chest; Henry R. Koehler, cutaneous and genito-urinary diseases; Louis Frank, gynecology and abdominal surgery; J. Garland Sherrill, surgery. The following are of the corps of instructors and laboratory directors: Sam. Holloway, surgery; Geo. C. Leachman, anatomy; John E. Hays, histology and bacteriology; Louis Rominger, histology. Kentucky University is the result of the coalition of Bacon College and Transylvania University in 1799, since which time it has been known as Kentucky University. The University comprises four colleges, each under the government of its own faculty, and an academy or preparatory department, in charge of a principal and assistants. The four departments are located at Lexington, Ky., but the curators of the University, desiring to establish the Medical Department, have chosen Louisville for the location of it. The College has adopted the requirements of the Association of American Medical Colleges and the teaching will be upon the broadest and most enlightened line of medical teaching. It has obtained quarters in the building formerly occupied by the Louisville College of Pharmacy and has fitted up elaborate laboratories and clinic-rooms, there being already adequate lecture-rooms.

CONTAGIOUS DISEASES.—A change has been made in the law governing the reporting of contagious diseases, to include typhoid fever, consumption and whooping cough. The list already includes scarlet fever, diphtheria, smallpox and cholera.

Detroit.

WAYNE COUNTY MEDICAL SOCIETY.—At the regular meeting held November 17, Dr. J. A. Weitz read a paper on "Infantile Paralysis." He said that the prophylaxis and management of infantile paralysis were not given the attention that they should have by the medical profession generally. The belief was too common that it is beyond our power to prevent in any measure the occurrence of the evil or mitigate the results. He divided the cerebral palsies of infancy into three classes: fetal, natal and post-natal. The fetal cases, he said, are evidently the result of prenatal influence, due mainly to errors in development, with occasionally a case dependent upon traumatism or infection in utero. As to post-natal cases, all evidences point to vascular obstruction as the lesion, whether thrombosis or embolism, is not definite. Toxemia in childhood often produces convulsions and temporary loss of power, but these are not included in the class of post-natal infantile paralysis or hemiplegia. Convulsions in young children, from apparently trivial causes, are so frequent, without serious result, that the profession are not sufficiently awake to the grave possibilities surrounding a case of this kind. We are thus frequently taken by surprise. In the class of cases mentioned as natal palsies the pathology is quite definitely settled, although investigations have been comparatively recent. The cause is probably always meningeal hemorrhage. In the prenatal cases our duty consists largely in the proper care and management of the prospective mother. In post-natal cases we have a similar office to perform in the management of the children among our clients, with the additional duty of directing the training of the residue of brain after an injury of this kind, besides conducting the case through the attack of acute symptoms. As the cases of cerebral hemorrhage are nearly always due to traumatism at the time of labor, we have a more active duty to perform in the matter of prophylaxis and in the active interference for the relief of the lesion. The cases are always due to difficult labor, where instrumental delivery is called for, so it behooves the physician to make vigorous efforts to prevent the condition which would give rise to a difficult labor. Where the lesion has occurred surgical interference should be tried for the relief of the condition.

CHANGE OF ADDRESS.

Anderson, J. A., from 8042 Edwards Av. to 151 Cheltenham Pl., Chicago.
Blue, W. R., from 1807 4th St., to 2205 3d St., Louisville, Ky.
Catlin, G. E., from Lake Geneva to L. B. 532 Marshfield, Wis.
Cummings, Wm. from 5th and E Sts. to 820 5th St., San Diego, Cal.
Davisson, J. A., from Eldorado to 715 Washington St., Dayton, Ohio.
Earll, R. W., from Columbus, to 2211 Cedar St., Milwaukee.
Gale, M. G., from Rowena to 1940 Washington Av., Denver, Colo.
Gibben, J. H., from Jefferson Barracks, Mo., to 324 S. 19th St., Philadelphia, Pa.
Greenley, T. W., from Leon Lake to Lake Placid, N. Y.
Hagopian, S. M., from Boston, Mass., to Exeter Rall, The Strand, London, W., Eng.
Haw, U. P., from Farmington to Commerce, Mo.
Hazelwood, A., from Shepherd to Aldrich Blk., Grand Rapids, Mich.
Hulen, A. H., from Galveston, Texas, to 71 W. 49th St., New York City.
Lisle, J. B., from Georgeville, N. C., to 97 W. High St., Springfield, Ohio.
Ransom, C. C., from Richfield Springs to 152 W. 48th St., New York.
Schoofs, J. Z., from Remsen, Iowa, to Johnsburg, Wis.
Shoemaker, S. E., from Reiffsburg to Poneto, Ind.
Smith, W. O., from New Castle, Pa., to Toledo, Ohio.
Westnedge, R. B., from Dubuque, Iowa, to 576 Jackson Boul., Chicago.
Wright, J. C., from Chicago, Ill., to Clear Lake, Iowa.

LETTERS RECEIVED.

Alton, C. D., Hartford, Conn.; Ammonol Chem. Co., New York City; American Therapeutic Co., New York City.
Baldwin, J. F., Columbus, Ohio; Barto, F. C., Plainview, Ill.; Behl, W. H., Salt Lake City, Utah; Bracken, H. M. Minneapolis, Minn.; Bulson, A. E., Jr., Fort Wayne, Ind.
Cantwell, B. F., Earleville, Mo.; Chandler, A. W., Compton, Ill.; Chicago Medical Book Co., Chicago; Cokenower, J. W., Des Moines, Iowa; Conkey, E. R., Waterbury, Conn.
Daniel, F. E., Austin, Texas; Dennis, F. S., New York City.
Earl, G. W., Hermansville, Mich.; Eshner, Augustus A., Philadelphia.
Gahm, J. P., Ellisville, Ill.
Haist, E. A., Brimley, Mich.; Haw, U. P., Commerce, Mo.; Hertzler, A. E., Halstead, Kans.; Hubbell, A. A., Buffalo, N. Y.; Hummel Adv. Agency, A. L., New York City.
Kempson, J. F. & Co., New York City; Kierman, J. G., Chicago; Kress & Owen Co., New York City.
Long, J. D., Chicago.
Maker, L. E., Sac City, Iowa; Malsbary, G. E., Cincinnati, Ohio; Mathews, J. M., Louisville, Ky.; Memminger, A., Charleston, S. C.; Merck & Co., New York City; Merrick, M. B. Passaic, N. J.; Milliken & Co., J. T., St. Louis, Mo.; Medical and Surgical Review of Reviews, Ltd., London, Eng.; Moe, A. J., Chaseburg, Wis.; Morse Adv. Agency, L. D., New York City; Morini, Vincense, Rome, Italy; Morris, Wm., Lebanon, Ill.; Moss, R. H., Niagara, Ky.; Mulford Co., H. K., (2), Philadelphia, Pa.
Otterson, W. D., Hillsboro Bridge, N. H.
Palatable Water Still Co., Chicago; Phelps, A. M., New York City; Platt, H. B., New York City.
Ralston, C. D., Arcola, Texas; Richardson, S. W., Cleveland, Ohio; Robinson, R. R., Wakefield, R. I.
Stroburg, J. A., Burlington, Iowa.
Thruslon, John, Louisville, Ky.
Wells, W. A., Washington, D. C.; Wheeler, C. T. Lexington, Ky.; Willson & Co., H. B., Washington, D. C.; Wine, R. E., Sewanee, Tenn.; Wingate, U. O. B., Milwaukee, Wis.; Woldert, E. A., Philadelphia, Pa.
Young, J. P., Empire, Ohio.